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Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors)

FIBERS A

Natural fibers A 1

"Low-down" on high polymers. R. L. Elliott. *Textile Recorder 68,* 71-2 (Aug. 1950).

This non-technical discussion of the properties of a fiber draws comparisons between the new synthetic fibers and the natural fibers.

Digest of research results.. 3—Wax content of cotton fibers. A. J. Hall. *Textile Mercury & Argus 123,* 215, 218 (Aug. 11, 1950).

This digest of research results on the wax content of cotton fibers covers the following topics: determination of wax in cotton; distribution within the fibers; increasing accessibility, recent researches; effect of wax distribution; new extraction methods; distribution of wax on cotton fiber surface, effect of weathering; effect in finishing; and wax removal detrimental to Schreinering.

Hard fibers. Anon. *Textile J. Australia, 25,* 367-70 (June 1950).

Discusses method of cultivation, cost and suitability of hemp for industrial purposes. The various hemps described include sisal hemp, Mexican sisal and New Zealand hemp. Also discussed are the characteristics, cultivation extraction, marketing, grading and uses of jute.

Jute and jute substitutes. B. Biswas. *Indian Textile J. 60,* 583-86 (Apr. 1950).

Discusses the jute economy in India, sources of supply and cultivation requirements. Also described are several plants which have potentialities as jute substitutes. These include fibers in the hibiscus group, malvaceous plant fibers and fibers from legume-like plants. Many of the individual fibers have even more desirable properties than jute, but are not used to appreciable extents because of small quantities grown.

Relation Of Count-Strength Product Of Long Draft Processed Yarn To Six Elements Of Raw Cotton Quality And Yarn Size. Robt. W. Webb & Howard B. Richardson. Washington, U. S. Dept. of Agriculture, Production and Marketing Adm., Cotton Branch, August 1950. 61 p.

This is the ninth report in the series made from a study of relationships of cotton fiber properties to manufacturing performance and quality of manufactured product. In the statistical analyses of this report, count-strength product of carded yarns of various sizes, ranging from 14s to 60s in conformity with the staple length of the raw cotton, were used as the dependent variable. Seven independent variables were included as follows: Upper half mean length (fibrograph), uniformity ratio, fiber fineness (weight per inch), fiber strength, percentage of mature fibers, grade of cotton, and yarn size. The study included 828 cottons and 2,484 lots of yarn from the test series for selected cotton improvement groups and the Experiment Station Annual Variety test series, crop years 1945-47. Three sizes of roving and spinning equipment, represented each cotton contained in the analyses. Measurements on these raw cottons and yarns were statistically studied by use of multiple and simple correlation analyses. A total of 219 correlation analyses were made.

Spinner opinions of irrigated cotton. Scott Hathorn, Jr. *Textile Bull. 76,* 70, 72, (July 1950).

Report results of a survey made of mills spinning Arizona-California irrigated cotton, i.e., Acala 4-42. Information was developed on the following points: (1) price discounts on irrigated cotton; (2) spinning value and processing of irrigated cotton in contrast with rain-grown cotton; (3) mill use of area and variety in buying cotton; (4) the possible value of bale identification as an aid to buying; (5) the use of fiber measurements

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as aids to buying; (6) general raw fiber characteristics desired by mills in relation to products made; and (7) promotion of irrigated cotton. Most mills using Acala 4-42 and 44 changed their processing as follows: (1) humidity was increased, particularly in the opening, picking and carding rooms; (2) the cotton was beat less in cleaning operations by by-passing some of the cleaning machines; and (3) the rate of carding was reduced somewhat.

Structure of natural fibers and its significance for the soap and cleaning industries. H. Staudinger. *Textile J. Australia 24*, 24, 26-9 (Mar. 21, 1949); *in English. Melliand Textilber. 29*, 302-05 (Sept. 1948); *in German.*

Textile fibers may be classified into the following groups: Wholly synthetic fibers, natural fibers, and semi-synthetic fibers, such as staple-fiber and Lanital, in which the macromolecules of natural fibers undergo a change of structure during the process of manufacture. The first group, wholly synthetic fibers, is best adapted for the study of the structure of the fiber, because the constitution of the macromolecules there at least in a number of cases such as polyester and polyamide fibers, can be elucidated in minute detail. Tensile strength and breaking strength properties are employed as characteristics of the fibers: the importance of transverse strength for serviceability can be recognized in fully-synthetic fibers, which difference is explained on the assumption that the macromolecules of the natural fibers are arranged spirally. Foreign matter included in the fibers is of special interest to the laundry and dry cleaning trades, because impurities may be connected with the fibers not only by subsidiary valences but also mechanically.—*Summary.*

Treatment of wool and other animal fibers. Leendert Maaskant (to Am. Enka Corp.). USP 2 519 842, Aug. 22, 1950.

A process of improving the physical and chemical properties of keratinaceous animal fibers, which comprises the steps of treating the fibers with a weakly acidic solution containing precondensation products of (a) formaldehyde and (b) a compound of the class consisting of resorcinol and chloro-substituted resorcinols in the preparation of which at least 6 mols of (a) per mol of (b) are employed centrifuging the thus treated fibers and drying the same by heating.

Value of scourable sheep branding fluids in wool manufacturing. Werner von Bergen. *Textile Industries 114*, 157, 161, 163, 165, 167, 171 (Sept. 1950).

Problems in the manufacture of woolen and worsted fabrics created by the presence of branding paint marks are discussed. Research work on scourable branding fluids has resulted in a paint, consisting of lanolin, carbon tetrachloride, and pigments, which can be removed in a normal soap-soda scouring process. Savings in the use of wool carrying scourable branding fluids will be possible due to the elimination of clipping in sorting, no accumulation of paint clips which have to be sold at a high loss, and the elimination of dry cleaning and de-pitching operations in finishing.

Wool fiber crimp and curvature. A. F. Barker. *Textile Mfr. 76*, 389-93 (Aug. 1950).

According to the author, it does not seem possible to correlate the length of the wool fiber follicle with the size of the crimp; there may be an approximation in the case of the merino, but not in the case of the Lincoln.

Artificial fibers A 2

Animalizing of cellulose acetate. Thos. S. Gardner (to Eastman Kodak Co.). USP 2 518 676, Aug. 15, 1950.

Cellulose acetate is reacted with ethylene imine at 50-150°C for 2 to 6 hours to render it susceptible to dyeing with wool-type dyes.

Compositions comprising an acrylonitrile polymerization product and a cyanoalkylaminoacetonitrile. Arthur Cresswell (to American Cyanamid Co.) USP 2 517 543, Aug. 8, 1950.

Polyacrylonitrile is dissolved in compounds of the type of N, N-di-(cyanomenthyl) aminoacetonitrile for the production of fibers, filaments or films.

Consumer acceptance of nylon. J. B. Quig *Knitter 14*, 40, 42 (July 1950).

See TTD: 7, 515.

Crimped yarn production. Wm. H. Charch, Weston A. Hare & Frank K. Signaigo (to E. I. du Pont de Nemours & Co.). USP 2 518 753, Aug. 15, 1950.

Crimpy filaments are produced from viscose by extruding into a non-regenerating coagulating bath which contains a borate, stretching and thereafter regenerating the filaments and drying them without tension.

Dynel becomes generic term for new fiber. Anon *Textile Bull. 76*, 38 (Aug. 1950).

The word "dynel" will be used as a generic term for textile fibers made of a copolymer of acrylonitrile and vinyl chloride, it is announced by the Carbide & Carbon Chemicals Division of Union Carbide & Carbon Co., which developed dynel. It is reported that the company will not protect the word as a trademark but it was indicated that patents relating to the fiber itself, held by the company, would serve to limit the production of the fiber by other companies and their use of the word.

French develop textile filament from castor bean. Anon. *Daily News Record 119*, 35 (June 20, 1950).

Rilsan is the name of a synthetic filament belonging to the superpolyamides, and made from the castor bean, which is beginning to be aggressively promoted in France. In the textile field, its use is limited mainly to upholstery and luggage. Properties of the fiber are reported as: Density, 1.10 (from minus 70 to plus 185°C); waterproof, absorbing 3% of water at 100% RH; unaffected by petroleum products, solvents, dilute acids, alcohols, etc.; tensile strength, 24 to 25 kilograms per meter per square meter; maximum extensibility, 14 to 22%; modulus of elasticity, 1.25 to 2 kilograms per meter per square meter; abrasion resistance is said to be good, and diameters 0.1 to 1 millimeters.

"Meralon". Clarence L. Myers & Co. *Hos. Ind. Weekly 56*, 1 (Oct. 3, 1949).

"Meralon," a new synthetic yarn containing rayon and a small proportion of nylon, is in experimental production, and is designed for use in half-hose, etc.

HA

Method of producing yarn. Henry von Kohorn. USP 2 517 946, Aug. 8, 1950.

A stapilized yarn is produced by subjecting two bundles of continuous synthetic filaments to different stretches to impart different breaking point elongations thereto, combining the bundles, and then stretching the composite yarn sufficiently to rupture only the filaments having the lower breaking point elongation.

Method of preparing nonpyrogenic medical absorbent wadding. Claude Chavanon. USP 2 518 123, Aug. 8, 1950.

A method of preparing non-pyrogenic medical absorbent wadding which comprises picking open the fibers of viscose rayon waste, subjecting the picked fibers to a 2-stage alkaline boil-off in caustic soda solution, the first stage containing a higher concentration of caustic soda than the second stage, desulfuring the fibers by treatment with a sodium sulfide solution, bleaching the desulfured rayon fibers, washing the resulting fibers while continuously stirring in all directions until the wash water is free of sulfur and sulfur-containing compounds, drying the fibers, and converting them to an unwoven lap.

Polymeric Boronamides. Robert W. Upson (to E. I. duPont de Nemours & Co.) USP 2 517 944, Aug. 8, 1950.

Fibers and films are made from polymeric boron amides.

Polymeric organosilanol-boronic acid reaction products and method for making same. Robert W. Upson (to E. I. duPont de Nemours & Co.) USP 2 517 945, Aug. 8, 1950.

Filaments and fibers are produced from the polymeric reaction product of a hydrocarbosilanediol and a hydrocarbon boronic acid.

Process for producing artificial filaments. Wm. D. Nicoll (to E. I. du Pont de Nemours & Co.). USP 2 515 889, July 18, 1950.

Provides crimped regenerated cellulose-protein filaments and fibers which will retain a substantial crimp after being subjected to a material stretch, and which filaments and fibers have a high wet and dry tenacity. Such fibers have great utility in producing mixed rayon-wool yarns and fabrics which can be dyed to substantially uniform color with wool dyes.

Synthetic fibers—A review of their present and future development. Herbert Rein. *Textile J. Australia 25*, 360, 362-63, 375 (June 20, 1950). English translation of *Melliand Textilber. 30*, 243-46 (June 1949).

See TTD: *6*, 827.

Synthetic fibers; the search for new polymers. J. A. Somers. *Brit. Rayon & Silk J. 27*, 43-4, 48 (Aug. 1950).

Discusses progress that has been made in producing polyamides having heterocyclic groups. The idea behind these special polyamides is not only that the presence of new atomic groupings might immediately influence the properties of the fibers made from such polyamides, but that these groupings might eventually be caused to take part in the formation of cross links when the synthetic fibers or articles made from them are subjected to

high temperature or other treatments. Thus, materials of increased stability of shape or structure and of increased resistance to deteriorating influences might be produced.

Synthetic fibers. The search for new polymers. I-II. J. A. Somers. *Brit. Rayon & Silk J. 26,* 64-5 (Apr. 1950); 52-3 (June 1950).

I—A new polymer must satisfy many conditions to be used as a raw material for a new fiber. The possibilities of introducing an aromatic nuclei into a polyamide is discussed; and fibers related to nylon are possible by this means. Formulas of different processes are given. One example of forming this type of polyamide and its conversion into fibers is given in detail, with temperatures, pressures, and the series of reactions that take place. The duPont process for modified nylon fibers is also described. II—Discusses polyamides containing "interrupting" oxygen or sulfur. A number of advantages are claimed for these special polyamide fibers and it is believed that they are superior in many ways to the corresponding filaments made from "interrupted" polyamides in which straight dicarboxylic acids such as adipic acid are used instead of terephthalic acid. For instance, they have higher softening temperatures and are less reactive towards water. Further they are less soluble in a more restricted range of organic solvents. It is important to note their high stability towards alkalies and to light. In addition these new fibers have good dyeing properties and they may be dyed with direct cotton, acid, wool, vat, acetate rayon and basic dyes.

YARN PRODUCTION B

Causes and effects of yarn irregularities. Anon. *Textile Mfr. 76,* 379-85 (Aug. 1950).

Abstracts are given of 6 of the papers presented at the annual conference of the Textile Institute as follows: 1) "The Effect of Yarn Irregularities on Fine Gage Fashioned Hosiery," by H. Unwin & J. W. Reast; 2) "The Efficient Mixing of Irregular Weft Yarns," by D. C. Snowden & J. Sidi; 3) "Some Effects of Yarn Irregularity in Dyeing and Finishing," by R. G. Fargher, H. M. Taylor & F. W. Thomas; 4) "Minimum Breaking Strength and the Assessment of Yarn Irregularity," by H. P. Stout; 5) "A Review of Methods of Measuring the Irregularity of Flax Ropes and Yarns," by J. A. Matthew, N. B. Rajchenbaum & J. L. Spencer-Smith; and 6) "A Comparison of Some Methods of Measuring Yarn Irregularity," by W. J. Onions, J. Pickering & W. Stables. See also TTD: *7,* 697.

Current practice in rayon staple spinning. S. A. G. Caldwell. *Fibres 11,* 191-94 (June 1950).

The author reviews some current practices in rayon staple spinning and discusses various factors and machines required to properly spin rayon staple. The importance of humidity control and staple length on spinning quality are cited. Opening equipment, the Kirschner beater and carding equipment are discussed. Special mention is made of flax tow and jute cords as being the most efficient machines for converting baled long staple rayon into sliver.

How nylon staple is processed at Newnan. Anon. *Textile Industries 114,* 124-26, 229 (Sept. 1950).

The processing of nylon staple on the American worsted system at Newnan Cotton Mills is described. Included in the discussion are: opening and picking, carding, spinning, static electricity control, and weaving.

Is "American system" a misnomer for processing of worsted yarn? Anon. *Textile Bull. 76,* 54, 56 (Aug. 1950).

The author cites his reasons why he thinks the term "American System" is now misleading in this review of the many changes required in cotton machinery and its displacement in some processing by entirely new machines.

Lubricating power of oils on jute. A. N. Saha. *Textile Mfr. 96,* 399, 400 (Aug. 1950).

A series of tests on jute fibers revealed that when 1% of oil was applied the coefficient of friction between the fibers and a glass surface was less than that between untreated fiber and the glass surface, but with the addition of higher percentages of oil further diminution in the coefficient of friction was not apparent.

Mechanization of cotton spinning. G. Dakin. *Fibres 11,* 289-94 (Aug. 1950).

The mechanization of cotton spinning is traced from its earliest inception. A brief history is given and illustrations shown of spinning frames, drafting and carding equipment. Future potentialities of this equipment are also cited.

Prevention of static at textile machines. G. H. Thompson. Brit. P. 637 678, May 1950. *Brit. Rayon & Silk J. 27,* 64 (Aug. 1950).

A pipe through which cold water is circulated is located just before the drawing heads. Water

condensation on the pipe raises the humidity and thereby reduces static.

Rayon staple on the cotton system; Fibro for cotton textile mill machinery. M. C. Dutt. *Indian Textile J. 60*, 565-71 (Apr. 1950).

Details of spinning, carding, drawing, winding, warping and sizing of Fibro on standard cotton processing equipment are given.

Relative humidity and rayon. E. Cotterill. *Can. Textile J. 67*, 54-6, 58 (Aug. 18, 1950).

Reviews the physical effects of varying moisture contents in rayon yarns. Recommendations are given as to proper conditions of humidity for various processes. The advantages of atmospheric control are discussed.

Survey of tricot knitting literature. I-IV. W. E. Shinn, C. B. Sink & Mary E. Parker. *Knitter 14*, 48, 50-1 (May 1950); 26, 28 (June 1950); 36, 39, 40 (July 1950); 40, 42, 44, 47 (Aug. 1950).

Part I covers the history of tricot knitting and machine types. Part II is a discussion of the construction of the tricot machine. Part III is a discussion of knitting yarn quality and yarns for high-speed knitting. Part IV offers information on preparation, knitting and fabric types and lists the 36 references referred to in the entire series.

Wool fibers now artificially crimped. Anon. *Am. Wool Cotton Reptr. 64*, 9-10, 41-2 (Aug. 17, 1950).

The Textralizing process of crimping natural wool fibers permanently, practically, and at low costs is described. The process improves the processing, appearance, resilience, and serviceability of wool carpet yarns. Spun silk and cotton fibers have also been successfully crimped by the Textralizing process.

Woolen and worsted spinning. From early days to present time. R. S. Audley. *Fibres 11*, 295-98 (Aug. 1950).

The development of woolen and worsted spinning from early days to the present time is discussed. A brief historical review of spinning is presented as is the development of spinning equipment. Present day spinning of worsted and woolen yarns as well as the equipment used is described.

Fiber preparation B 1

Apparatus for the treatment of webs or fleeces. Thos. Merchant (to Hubert Duesberg). Can. P. 463 466, Feb. 28, 1950.

Apparatus for controlling the pressure between a pair of crushing rollers for textile webs, one of which rollers is journalled in adjustable bearings at each end of the roll, the apparatus comprising, a fluid operated device associated with each bearing, each device including piston and cylinder elements, one of which elements is stationary and the other movable with the bearing, a closed fluid system interconnecting the cylinder elements and screw means applying an adjustable pressure upon the fluid in the closed system thereby to effect a corresponding pressure adjustment at each of the fluid operated devices.

Clarifying wool neutralization liquors. G. Jones. Australian P. 137 492, Apr. 28, 1947.

Bentonite is added as a flocculating agent, and the flocculated solids are then mechanically separated from the liquor. Preferably the liquor is initially dosed with an alkaline earth oxide or hydroxide (e.g., hydrated lime). Apparatus comprises a liquor-lime mixing chamber provided with a stirrer and associated with a lime feed regulator; a liquor-bentonite mixing channel associated with means for feeding bentonite suspended in water to such channel; a settling tank; and means to circulate liquor from a neutralizing bowl through the mixing chamber and mixing channel to the settling tank, and to return it from the top of the tank to the bowl.

Continuous process nylon waste opening. Anon. *Am. Wool Cotton Reptr. 64*, 6 (Aug. 31, 1950).

A continuous process opening unit for nylon waste gradually reduces the fabric to the fiber stage, giving better, clearer garnetts free of threads. The fabric is fed to a Proctor picker, discharged through a condenser to a coarse shredder, then through a condenser to a fine shredder, and finally through another condenser to 3 garnetts.

Figuring blows per inch on picker beaters. Anon. *Textile Industries 114*, 155, 157 (July 1950).

In a communication to the editor, a contributor gives calculations used in figuring blows per inch on picker beaters.

How do you open your cotton? V. E. Oleman. *Textile Bull. 76*, 60, 62 (July 1950).

Suggestions are given for improved practices in opening cotton. All cotton of a particular lot should be stored together to facilitate the obtaining of better blends. This also avoids going abruptly from cotton of one section to another

which often causes trouble in spinning. It also helps when green cotton of a new season is first used, as the new cotton can be mixed gradually with the old cotton and the transition from one crop to another is hardly noticed. It is also recommended that bale ties be removed *outside* the opening room in order to reduce the number of opening room fires.

Mechanical crimping of fibrous materials. Wm. H. Brown & Ward E. Lindemann (to Houdaille-Hersey Corp.). USP 2 508 489, May 23, 1950.

A machine is provided for mechanically crimping fibrous materials.

New cotton-opening machine for textile mills developed by USDA. Anon. Official News Release, Sept. 4, 1950, U. S. Department of Agriculture, Agriculture Research Administration.

An improved machine of radically new design for opening and fluffing baled cotton to make it clean easier and spin better has been developed at the Southern Regional Research Laboratory. The new machine should prove of special value in preparing mechanically harvested cotton for cleaning and processing into yarns and fabrics. The new machine rapidly opens baled cotton to a loose fluffy condition, similar to that of cotton lint right after ginning and before baling. This permits improved cleaning and blending of the fiber in conventional textile equipment. The machine has an unusually high production rate for its size, and so helps save space in crowded mill rooms. An opener of this type large enough to loosen and fluff 4 bales (about 2000 pounds) of cotton an hour occupies only about 6 x 8 ft. of floor space. Larger machines that will open as much as 10 tons of cotton an hour can be built. In contrast to ordinary openers, which employ blades or beaters, the new machine consists of a number of toothed, gin-saw or "licker-in" wire cylinders, arranged one above the other and all rotating in the same direction. The cotton forms a rapidly revolving soft roll as it feeds into the machine on a conveyor belt. Small tufts are pulled out of this roll by the rotating cylinder teeth and are then removed from the teeth by means of a new doffing apparatus with metal blades. This metal doffer is an outstanding feature of the opening machine. It appears to have potential use also in cotton gins and other equipment handling short fibrous materials. Despite its high-speed operation, the improved opening machine does not cause neps even

when processing immature cottons, which tangle easily. Yarns spun from cotton prepared by the new opener can be made "loftier" without reducing their strength. The principle of the opener is covered by USP 2 365 793 (See TTD: *2*, 52). Additional information on the machine, including a complete description of the new method of doffing, may be obtained from the Southern Regional Research Laboratory, 2100 Robt. E. Lee Boulevard, New Orleans 19, La.

Opening room layout. Anon. *Textile Bull. 76*, 54, 56 (July 1950).

In the form of a letter from "Dad" to "Son" a practical discussion is given of opening cotton. The machinery used and the layout of the equipment is described.

Web removing apparatus. H. Duesberg. Australian P. 137 489, June 22, 1950.

To remove fiber web from a smooth crushing roller a doffing roller is provided with wire teeth on its periphery to receive the web, and a mounting device locating the roller in position. Drive means rotate the doffing roller in a direction and at a relative speed that ensures a condensing of the web before removal.

Carding and combing B 2

Carding machine. A. G. Arundel-Evans. Australian P. 137 950, July 27, 1950.

A carding engine of the type comprising a cylinder, a feeding device, a series of pairs of workers and strippers, and a doffer, characterized in that the feeding device and the doffer are both disposed on one side of the cylinder, the feeding device is disposed above the doffer, and workers and strippers are disposed around the top, opposite side and bottom of the cylinder.

Do you want less card fly waste? V. E. Oleman. *Textile Bull. 76*, 48, 50 (Aug. 1950).

Practical suggestions are given for reducing the amount of card fly waste.

Lap winding machine. Otto W. Schlums (to Whitin Machine Works). USP 2 502 894, Apr. 4, 1950.

Provides improved means for applying and releasing friction on the drum associated with the rack bars of a lap winder.

Mill of today. Part 20—The card room. Robt. Z. Walker. *Textile Bull. 76*, 62, 64, 66, 68, 70 (July 1950).

This continuation of a series discusses the following topics: Principles of carding, setting comb to doffer, sweep of the comb, lubricating the comb box, end play on eccentric shaft, coiler assembly, and the tube gear. (See also TTD: *6*, 185 & *7*, 517.)

Drafting and roving B 3

Process for forming yarns. Robt. Burgess, Jr. USP 2 519 347, Aug. 22, 1950.

A procedure, in the cotton system, for forming yarn from a mixture of dyed and undyed fibers of cotton or rayon which involves doubling a roving of dyed fibers with a roving of undyed fibers and subsequently doubling and drawing with another one of these rovings and then spinning.

What happens to cotton in multiple drawing? Howard Loveless. *Textile World 100*, 110-11 (Aug. 1950).

This reports the results of a series of tests on drawing and re-drawing the same sliver as often as 33 times. As the drawings increased, neps, strength, and uniformity also increased but elongation and appearance decreased. A series of graphs show these results. Photographs show the appearance of the yarn at various stages. A table gives the basic data used for the graphs.

Spinning B 4

Automatic spinning control. Ernest F. Culbreath (to Numo Machine & Engineering Co.). USP 2 503 099, Apr. 4, 1950.

An automatic means for returning the building mechanism of a spinning frame from full bobbin to doffing position which entirely eliminates the hand operation heretofore necessary, and also controls the tail formed on the bobbins within close limits. The automatic spinning control is readily adapted for installation on any of the types of spinning frames now commonly in use and is easily adjustable to meet the varying conditions and requirements of operation.

"Balmes system" of high drafting. Anon. *Textile Recorder 68*, 78-9 (Aug. 1950).

Details of the Balmes system of high drafting are described and the advantages claimed for the system are noted.

Drafts up to 1,000 claimed for Ambler system. Anon. *Textile World 100*, 122, 196, 198, 200

(Aug. 1950).

The basis for the Ambler Super-Draft system is an ordinary worsted spinning frame. The back rolls consist of a driven flanged bottom roller and a spring loaded top roller. A funnel shaped intake guide back of this pair of rolls leads to the flange. The super-draft unit, mounted on an adjustable bar, consists of a grooved metal twist stabilizer; a fiber guide; a pair of small flanged tension rollers, and a funnel shaped, small flume set very close to the nep of the front rolls. Drafts up to 110 for cotton, 250 for wool and 1,000 for long staple rayon have been obtained. Drafts of 150 have been used commercially. Maximum drafts, limitations of the system, and possibilities of the system are discussed. Illustrations with a diagram.

Increasing production in spinning room. Dilip V. Sampat. *Indian Textile J. 60*, 640-41 (May 1950).

A method of oiling the loose boss top rollers on the spinning frames so as to eliminate stoppages is described.

Mounting for textile mill spindles. Herbert Gleitz & Chas. E. Miller (to The Marquette Metal Products Co.). Can. P. 463 694, Mar. 14, 1950.

A mounting device for a textile mill spindle unit wherein the spindle unit is supported on a slide assembly for right-line movement of the spindle whorl into and out of frictional engagement with a driving band, characterized by provision of a handle member on the slide assembly operative to move the spindle unit to a non-driven position and functioning as a latch to hold the unit releasably in that position.

New ICS texts now available. Man-made fibers by John K. Stearns & Spinning synthetic fibres on the cotton system, by A. L. Landau; Internatl. Correspondence Schools, Scranton, Pa.; paper, 60 and 71 pages. *Textile World 100*, 250 (Mar. 1950).

These 2 new instruction texts describing 1) many synthetic fibres and 2) how to spin them on cotton-spinning systems were recently prepared to meet the demand of students working in textile mills for information on synthetic fibers. The first booklet features physical and production characteristics of many synthetic fibers now in production, including Orlon, Saran, polyethylene, Azlon, rayons, and glass. The second booklet gives step-by-step instructions in opening, blending, picking, carding, drawing, and the roving processes.

New spindle and brake. Anon. *Am. Wool Cotton Reptr. 64,* 13 (Aug. 10, 1950).

Features of a new spindle and bracket with positive braking action for large package spinning and twisting are described. The spindle operates at high and constant speed with heavy loads and produces a yarn of uniform twist and greater strength.

Spindle driving mechanism for spinning frames. John A. Kooistra (to Davis & Furber Machine Co.). USP 2 519 769, Aug. 22, 1950.

In a spinning frame having a main frame, a rising and falling spindle frame, a plurality of spindles rotarily mounted on each side of the spindle frame, a plurality of belts each driving a group of spindles located at both sides, and a driving cylinder for engaging and driving all the belts, the driving combination in which there are 3 idler pulleys for each belt, one on the main frame below the spindle frame yieldably pressed against the belt, a second fixedly journaled on one side of the spindle frame, and a third mounted on the other side of the spindle frame and yieldably pressed against the belt and in which the belt passes from a spindle at the one side over the second pulley, thence around the first, then around the cylinder and then under the third to the spindle at the opposite side.

Spindle of yarn spinning machines. Richard G. Peeples. USP 2 517 920, Aug. 8, 1950.

In a spindle mounting, a tubular spindle base having a flange near its upper end and a screw threaded portion spaced axially from the flange and arranged beneath the same, the spindle base having a lower reduced portion extending axially beyond the screw threaded portion, the lower reduced portion having opening means in its lower end, a tubular bolster disposed within the tubular spindle base and having a lower reduced portion, the tubular bolster being provided near its upper and lower ends with openings, a rotatable spindle having a shank mounted within the tubular bolster, a tube mounted upon the reduced lower portion of the spindle base and having a contact fit therewith, the outside diameter of the tube being less than the inside diameter of the screw thread of the screw-threaded portion, the tube extending below the tubular bolster for a substantial distance for forming a sludge trap, and a nut to engage with the screw threaded portion of the spindle base, the nut having an inside diameter greater than the outside diameter of the tube.

Spinning data given by Georgia men. Anon. *Textile World 100,* 123, 186, 188, 190, 192, 194, 196 (Aug. 1950).

Questions answered by 39 mills and discussed at the spring meeting of the Textile Operating Executives of Georgia are reported on in condensed form. These include spinning tape life, nylon saddles, automatic blowers, non-sloughing cam, spindle vibration, fuzzy yarn, sloughing, starting new rings, plush scavenger rolls, cleaning Foster winders, winder speeds, and cleaning and checking Barber-Colman spoolers.

Spinning machine. J. H. Hayes. Australian P. 137 567, June 22, 1950.

Bobbin building mechanism is mounted upon a frame, to which is also connected a draft section which is capable of vertical movement with respect to the bobbin. The draft sections are moved vertically, during the building of the bobbins, by means of screw jacks operated from shafts, the draft sections swinging on links.

Why not spin onto cones? Robt. A. Smith. *Textile World 100,* 102-03, 184 (Aug. 1950).

Spinning of 1⅝ run and finer yarn is done cheaper by spinning directly to cones rather than to bobbins, then winding onto cones. This is based on a 5″ ring, but simple calculations would reveal the break even point as far as run size and ring size for any plant. Capital investment is also reduced. An explanation of the process and of the calculations is given. Illustrated.

Winding and spooling B 5

Multisection yarn feeding roll. Paul J. Galbreath (to Eastman Kodak Co.). USP 2 514 634, July 11, 1950.

In a yarn twisting machine, the present invention provides a feed roll or shaft which is made up of a plurality of separate sections which are connected together by flexible or yieldable couplings which permit slight misalignments of the sections without interfering with the proper operation of the shaft.

Pirn winding machine. R. Sutton. Australian P. 137 560, June 22, 1950.

For winding a tapered pirn having layers of yarn wound at an angle to the axis and gradually advancing from the base to the tip a machine, is provided with compensating means to equalize the tension of the yarn as the wound diameter varies

from a maximum to a minimum. The movement of the compensating means being synchronized with the movement of the thread laying guide.

Travelers move freely on the alert. Anon. *Oilways 17*, 7-9 (Sept. 1950).

Describes twister ring types and methods of lubrication.

Twisting and winding of textile fibers. Edw. C. Pfeffer, Jr., John J. Gannon & John J. Fiscella (to Cluett, Peabody & Co., Inc.). USP 2 518 491, Aug. 15, 1950.

A multiple-twist type of twister which is provided with a bell crank lever supported adjacent and outside the package support. When the package support is properly stationary, a magnet therein supports the bell crank lever, but when the package support begins to rotate, the bell crank lever drops about its pivot and one arm thereof falls into the way of a shoulder on the package support, thereby stopping it from rotation.

Yarn (synthetic), doubling. Brit. Celanese. Brit. P. 623 753, May 23, 1949.

Process for doubling 2 continuous filament artificial yarns whose dyeing properties vary along their length (e. g. from end to end of each spinning-package length), in a way that a yarn of uniform dyeing properties is obtained.

Yarn processing — B 6

Six first-hand pointers on processing rayon. Robt. H. Pharr. *Textile World 100*, 114-15 (Aug. 1950).

These six pointers for staple rayon yarn manufacture cover: 1) Selection of fiber handling and warehousing of bales; 2) opening, blooming, handling of reworkable waste; 3) picking, including type and number of beaters, blows per inch, beater speeds and settings, lap size and weight, split lap preventers, and calender roll adjustments; 4) card speeds, settings, and waste practices; 5) drawing roll speeds and settings, and number of processes; and 6) fly frame roll settings, roving size, tension, amount of twist, and relative humidity.

Treatment of cotton yarns. Luther Axford (to Dominion Rubber Co., Ltd.). Can. P. 464 322, Apr. 11, 1950.

The process of improving the tensile strength of grey cotton yarn which comprises contacting the yarn with a hot aqueous solution comprising from

10 to 50% of water and correspondingly from 90 to 50% of a saturated monohydric aliphatic alcohol which contains from 3 to 5 C atoms per molecule and which is capable of dissolving water at 75°-95°C to the extent of at least 10 parts of water per 100 parts by weight of the alcohol and water solution, tensioning the strand while it is hot and wet with the solution, and drying the resulting yarn under tension.

Special yarns — B 7

Aberfoyle develops new spun nylon yarn. Anon. *Knitter 14*, 66-7 (Aug. 1950).

Aberfoyle Mfg. Co. is producing commercially for the first time a new spun nylon yarn for knitting and general textile purposes. The new yarn is different from present spun nylon in that it is made in the cotton system and not the worsted system. That means the staples are much shorter and consequently there is less danger of pilling. The newest counts opened up are singles, produced especially for knitters of hosiery, underwear and outerwear. The yarn is being made in 30/1 up to 100/1 and 20/2 in natural bleached or dyed as required.

Manufacture of composite products of rubber and rayon and the products obtained thereby. James W. Illingworth (to Dunlop Tire & Rubber Corp.) USP 2 518 144, Aug. 8, 1950.

The bond of rubber to rayon is improved by incorporating casein in the rayon.

Rayon staple and wool blends produce new possibilities for carpet trade. Robt. E. Smith. *Textile Age 14*, 14-16 (Aug. 1950).

Results of tests on carpets of blended wool and rayon indicate that the carpet pile wears as long or longer than similar pile of all wool, offer greater color possibilities, make it more soil resistant, and sheds less than most all-wool carpets. Tests giving these results were made with Avisco "15," a crimped, viscose rayon type carpet staple of subdued luster. It is a 15.0 denier fiber made in uniform 3-inch lengths.

Yarn testing and numbering — B 10

Yarn numbering problems. Lawrence Prelog. *Textile J. Australia 25*, 316, 318-20, 322, 324, 326 (June 1950).

Formulas for calculating yarn number in the various systems are presented.

FABRIC PRODUCTION C

Yarn preparation C 1

Full electric slasher drives. J. B. Stephenson. *Am. Wool Cotton Reptr. 64,* 9-10 (Aug. 31, 1950).

A discussion of multi-motor drives for slashers, their operation and control is presented. Multi-motor drives allow yarn to be wound at uniform tension with firm warps, more yardage, and fewer broken ends resulting. Acceleration and deceleration are at predetermined rates, and maintenance is reduced due to the elimination of the friction clutch.

Governor for slasher winding. Jos. A. Carrier (to (Dominion Textile Co., Ltd.). USP 2 518 417, Aug. 8, 1950.

An apparatus adapted to control the speed of a power driven slasher winder beam so as to exert a constant tension on yarn delivered from a slasher to the beam, the beam being rotatably mounted adjacent the delivery end of a slasher frame, the apparatus comprising, a friction clutch disposed between the winder beam and power source, a fixed guide roll mounted parallel to the winder beam axis and extending across the slasher frame, a pair of bell cranks pivotally mounted on the slasher frame, one adjacent each side, a compensating roller mounted between one pair of arms of the bell cranks and extending across the frame parallel to the axis of the guide roll, counter balanced linkage means between the bell cranks and clutch, whereby yarn delivered from the slasher passes over the compensating roller and under the guide roller to the winding beam in a path substantially parallel to a plane passing through the pivotal points of the bell cranks and the axis of the compensating roller so that the angle of pull is not changed substantially by the diameter of wound on yarn of the beam and increase in tension on the yarn is adapted to actuate the compensating roller and clutch so as to produce a compensating decrease in the winder beam speed.

Improved warping system. Anon. *Textile Mercury & Argus 122,* 848-50 (May 26, 1950).

Describes features of the Hattersley horizontal warping machine with solid swift, in conjunction with the Holt traveling single end type cone creel. Precision control of yarn tension is said to be obtained with this equipment.

Method of and apparatus for preparation and distribution of sizing materials. Geo. J. Kyame (to

U. S. of Am.). USP 2 516 884, Aug. 1, 1950.

An apparatus system for preparing and distributing sizing comprising a tank, a heat exchanger external to the tank, a size box and a liquid pump, the tank having a lower outlet for size and a submerged blast liquid injector having a nozzle adjacent the bottom of the tank; the heat exchanger having an inlet and outlet for liquid to be heated; the size box having a submerged blast liquid injector having a nozzle adjacent its lower end, and having a liquid drain at its lower end; a valved conduit connecting the intake of the pump with the size outlet at the lower end of the tank, a second valved conduit connecting the intake of the pump with the size outlet at the lower end of the size box, a third conduit connecting the outlet of the pump with the heat exchanger, a 4th valved conduit connecting the outlet of the heat exchanger with the inlet of the liquid injector of the tank, a 5th valved conduit connecting the outlet of the heat exchanger with the inlet of the liquid injector of the size tank, and float means in the size box to control the volume of flow of size through the size outlet to maintain a constant liquid level in the size box.

Progress in sizing. Anon. *Textile Weekly 46,* 360, 362, 364 (Aug. 11, 1950).

The principles of sizing and the requirements of a size mix are considered. Developments in sizing in the U. S. are noted briefly.

Sizing of aromatic polyester yarns. Richard J. Smith (to Imperial Chemical Industries Ltd.). Can. P. 463 568, Mar. 7, 1950.

A process for sizing multifilament yarns of a linear polyester of a terephthalic acid and a glycol of the series $HO(CH_2)_nCH$ where n is an integer from 2 to 10 inclusive, which comprises impregnating the yarns with an aqueous solution of a partially hydrolyzed polyvinyl acetate having a saponification number of from 10 to 300, and a water-soluble resin obtainable by the condensation of an alkylolurea with formaldehyde, the polyvinyl acetate and the water-soluble resin constituting from 2% to 12% by weight of the solution.

Sizing of warp yarns. Anon. *Textile Weekly 46,* 228, 230 (July 28, 1950).

Reviews the changes in sizing outlook and the changes in machines and sizing ingredients. Modern sizing equipment of the United Kingdom, America and Germany is noted briefly.

Slashing and weaving discussed by Alabama men. Anon. *Textile World 100*, 129, 206, 208, 210, 212, 214 (Aug. 1950).

The Alabama Textile Operating Executives discussed the following questions: 1) Per cent moisture left in the warp at slashing; 2) homogenizers; 3) benefits of using viscometers on slashers; 4) how to keep warps straight; 5) slasher drying other than by steam; 6) method of cleaning in the weave room; 7) supply costs on X-series looms; 8) quality control system; 9) new type loom drives; 10) prevention of kinking in unconditioned filling; and 11) causes of warp streaks in fabrics. The experience of mills on each of these questions is reported on briefly.

Weaving C 2

Automatic pick and pick filling mixing loom. Ernest P. Guerin (to Crompton & Knowles Loom Works). Can. P. 464 161, Apr. 4, 1950.

In a weft replenishing pick and pick weft mixing loom for weaving a fabric of uniform color and texture, the combination of 2 weft mixing instrumentalities, the first instrumentality comprising means whereby a plurality of shuttles become active in given order and means whereby each of such shuttles is followed by another shuttle after being active for but one pick of the loom, and the other instrumentality comprising means for supporting groups of reserve bobbins and means for releasing reserve bobbins from the groups for successive replenishing operations of the loom in a predetermined order whereby a mixing in the selection of the bobbins is effected with respect to their groups of origin, the second instrumentality having means to insert the bobbins so released into the shuttles one after another as the shuttles become depleted of weft.

Beat-up for looms. Clarence R. Kronoff & Geo. N. Peterson (to Crompton & Knowles Loom Works). USP 2 517 215, Aug. 1, 1950.

In beat-up mechanism for a circular loom having a weft thread extending in a warp shed to the fell of the cloth, a shuttle moving in a circular path, and a weft beat-up wheel rotatable on the shuttle and moving bodily through the warp shed and having teeth in the periphery thereof which press the weft thread against the fell separated by notches which receive the warp threads.

Circular loom. P. G. Vanlaer. Australian P. 137 768, July 13, 1950.

A centrifugal sectional loom includes rows of warp operating cams set on a central rotor in adjustable manner, trays carrying weft cones and horizontal impeller plates for each section of the loom. The weft threads fed from the cones are conveyed pick by pick by travelers shot through the sheds by the centrifugal effect of the impeller plates revolving at high speed.

Cross border dobbies. W. Middlebrook. *Textile Mfr. 76*, 370-1, 374 (Aug. 1950).

A detailed technical description of 4 different types of efficient well-known dobbies, including 2, 3 and 4-cylinder arrangements.

The design and production of plain rayon weaves—4. A. T. C. Robinson. *Silk & Rayon 23*, 926, 929-30, 932, 934 (July, 1949).

The fabric construction, design and production of Canton crepe, marocain, sand crepe, voile and ninon, georgette, crepon georgette, and crepe warp, flat filament weft fabrics are described and illustrated.

Design and production of tie fabrics. A. T. C. Robinson. *Skinner's Silk & Rayon Rec. 24*, 1068, 1070, 1074, 1076, 1078 (Aug. 1950).

This is a practical discussion of the design and production of tie fabrics. Topics covered include: 1) Styles in tie fabric; 2) stripe variations, 3) crease resistance; 4) the lining and making-up; 5) marking and spotting; 6) resistance to abrasion; 7) coloring the fabrics; 8) ombre and graduated stripes; 9) self-colored tie fabrics; 10) Barathea; 11) broken Barathea; 12) pebblegrain; and 13) poplin.

Design and production of rayon satins. A. T. C. Robinson. *Silk & Rayon 23*, 1349-50, 1352, 1354 (Oct. 1949).

The fabric construction, design, production, and uses of the various types of rayon satins are described and illustrated.

Device for gripping and holding a weft thread in nipper looms. Albert Moessinger (to Sulzer Freres, S. A.). USP 2 519 274, Aug. 15, 1950.

A thread gripper for looms, comprising a lever member having a clamping arm, a reciprocatingly movable operating member having an end portion swingably connected to the lever member, resilient means connected with the operating member and engaging the lever member and forcing it into operating position, the direction of movement of the operator member being substantially at a right angle to the clamping arm.

Dobby knife. T. Hindle. Australian P. 137 795, July 13, 1950.

A knife for actuating the jack levers of dobby loom has its working edge formed into a series of steps corresponding in number to the number of hooks to be actuated. The steps are so arranged that when the knife has completed its propulsive stroke the stepped edges are all parallel to the loom end-frame but the rearmost step is further displaced from its starting position than the front step, whereby the hooks bear squarely on the knife edges, resulting in full-width contact and obviating any tendency for the hooks to slide along the knife in either direction.

Electrical let-off. Henry T. Marcy (to The M. W. Kellogg Co.). USP 2 518 158, Aug. 8, 1950.

A method of weaving through recurrent cycles in a loom having a warp-beam, which comprises converting an electric current into mechanical resistance yieldably opposing rotation of the warp-beam, and rapidly increasing the intensity of the current during a predetermined period of each cycle to increase the mechanical resistance.

Electric weft detecting mechanism for drop box looms. Carl P. Bergstrom & Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 485 134, Oct. 18, 1949.

The present invention provides a plurality of detector branch circuits, one for each detector of a gang, and a selector operated by the shuttle box operating mechanism which will connect the loom controlling circuit to but one of the branch circuits, namely, the one corresponding to the shuttle which is either active or is about to become active.

FABRIC DEFECTS; CASE HISTORIES OF IMPERFECTIONS IN WOVEN COTTON AND RAYON FABRICS. J. B. Goldberg. First ed. (Textile Technology Series). New York, McGraw-Hill Book Co., Inc., 1950. 371 p. Price: $6.00.

This book presents a series of case histories of defects in textile materials with some explanation of the contributing factors and suggestions for analyses. No effort has been made to compile an encyclopedia which would enable the reader to immediately identify and analyze every known imperfection in gray and finished goods. The imperfections described are actual defects encountered by the author in some 20 years experience in textiles. The contents of the book are divided into 6 chapters as follows: (1) Gray-mill defects, (2) Defects in man-made fibers and yarns, (3) Dyeing and finishing faults, (4) Defects in garments, (5) Miscellaneous imperfections and (6) The investigation of fabric defects. In addition there is a glossary, and bibliography. In an appendix are given sources of supply of laboratory equipment. The subject index greatly increases the usefulness of the book. For each defect considered information is given on the following: fabric, construction, finish, defect, and analysis. Illustrated with excellent photographs and photomicrographs of the defects.

Fault detector in looms. M. Fayolle. Australian P. 137 951, July 27, 1950.

An arrangement for detecting caught threads in looms, chiefly circular looms, including a sensing member located to the front of the shuttle on the outside of the shed and mechanically independent of the shuttle, the sensing member being adapted to bear in succession on the different warp threads of the warp sheet that is on the other hand displaced by the movement of the heddle frames, whereby any insufficiently wide opening of the shed appearing by reason of the presence of a caught warp thread releases the sensing member that rocks round its spindle under the action of a spring or the like, the rocking controlling electromagnetically, mechanically or through any suitable means, a device adapted to stop the operation of the loom.

Gantt charts. I. Laird. *Textile Mfr. 76*, 386-88 (Aug. 1950).

Continues the discussion of Gantt charts (see TTD: 7, 760). Gantt charts are particularly useful in the planning and progressing of manufacturing orders from the ordering of the yarn until the final dispatch of the last piece of goods.

Heddle arrangement for circular looms. Victor M. J. Ancet (to Regina S. A.). Can. P. 464 073, Mar. 28, 1950.

A heddle mechanism for use in a circular loom.

Leno weaving; some variations with one doup. John H. Strong. *Textile Mercury & Argus 122*, 1062-65 (June 30, 1950).

This is a detailed, practical discussion of leno weaving.

Loom. Max Paabo. USP 2 519 786, Aug. 22, 1950.

In a pneumatic loom having a substantially vertically reciprocating lay, the combination comprising a frame, means mounted on the frame for delivering a weft thread from a supply thereof,

stationary jet means for blowing the weft thread through the warp shed with compressed air and means for cutting the weft thread at the entrance of the shed.

Loom speeds. Anon. *Textile Bull. 76,* 62, 64, 66 (Aug. 1950).

This article on loom speed is a reprint of a chapter from *Clark's Weave Room Calculations.* See TTD: *7,* 454.

Means for preventing injury in case of loom shuttle stoppage. Francis J. Sullivan & Arthur R. Abbott (to Sidney Blumenthal & Co., Inc.). Can. P. 463 397, Feb. 28, 1950.

A loom comprising, a frame, a shuttle box at each side thereof, picking mechanism for driving a shuttle to and from the boxes, lay mechanism, electric means for stopping the loom when the shuttle fails properly to enter its box, and electrically controlled mechanical means for also stopping the lay mechanism when the lay has partly completed a forward stroke, the last-named means including a dagger carried by the lay and an electrically actuated element normally positioned out of the path of travel of the dagger but adapted to be moved into the path for contact by the dagger.

New heddle repair cuts down-time. Anon. *Textile Age 14,* 56-7 (Aug. 1950).

The Walker Lock-on Heddle Repair, a new type heddle repair, is reported to cut down-time in hall. Use of this new unit to repair heddles is described with the aid of illustrations.

Picking mechanism for looms. Howard M. Van Alstyne & Walter Bell (to F. C. Huyck & Sons). USP 2 517 454, Aug. 1, 1950.

In a picking mechanism for a loom, the combination with a driving clutch element; of a driven clutch element; a picker strap actuated by the driven element; a spring normally maintaining the elements out of cooperating engagement; a cam on the driven element; a normally stationary follower cooperating with the cam for moving the driven element into cooperation with the driving element; a pivotally mounted lever adapted to be rocked about its pivotal mounting in synchronism with the lay of the loom and having a roller rotatably mounted on one arm thereof; a link and a pivotal mounting therefor operatively connecting the link to the follower and positioned to adapt one end of the link to swing into and out of the path of movement of the roller; and means adapted to be controlled by the pattern mechanism of the loom for controlling the movement of the link.

Picking shaft for looms. Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 518 945, Aug. 15, 1950.

In picking mechanism for a loom having a picker stick and a power shaft, a picking cam on the power shaft rotating during loom operation, a picking roll for cooperation with the cam, a power arm operatively connected to the picker stick, aligned front and back bearings, a picking shaft comprising an inner shaft member journalled in the bearings and to which the power arm is secured, an outer tubular shaft member operatively connected to the picking roll, and a resilient rubber sleeve within the tubular member surrounding part of the inner shaft member and bonded to both of the members to cause angular motion of the inner shaft member to operate the picker stick when the cam by operation of the roll causes angular motion of the tubular member, the outer tubular member and resilient rubber sleeve extending along the inner shaft member between the power arm and the picking roll.

Picker stick stop mechanism. Geo. H. Hufferd (to Houdaille-Hersey Corp.). USP 2 519 372, Aug. 22, 1950.

In a picker stick linkage for a loom, a first linkage member movable with the picker stick, a second linkage member having a variable displacement relative to the first linkage member as the picker stick moves, a spring urging the picker stick to its extreme outward position, a stop secured to one of the linkage members, an arm secured to the other of the linkage members and extending adjacent the stop, the arm having yieldable latch means thereon engageable with the stop to retain the picker stick at its shuttle catching, intermediate position against the bias of the spring, the latch means being constructed to disengage from the stop under the force of shuttle impact on the picker stick.

Power lug strap retainer. Wm. F. Leineweber, Jr. (to W. D. Dodenhoff Co.). USP 2 519 838, Aug. 22, 1950.

A power lug strap retainer for a picker stick comprising, in combination, a bracket defining a channel constructed to envelop a picker stick, means on the outer faces of the bracket for vertically retaining a lug strap in engagement therewith, the bracket having an inclined, inwardly facing surface portion spaced from one face of a picker stick positioned therein, a wedge having

its angularly disposed surfaces respectively engageable with the inclined surface portion of the bracket and the one face of the inserted picker stick, and means urging the wedge into clamping engagement between the bracket and the picker stick.

Pressure applying means for cloth rolls in looms. Wm. H. Bahan. USP 2 519 424, Aug. 22, 1950.

In a loom having a sand roll, a pair of vertically movable members mounted in the loom and having means for supporting a cloth roll pin in the upper end thereof and having a longitudinally extending groove in their front edges in their lower portions, a transversely disposed shaft mounted in the lower end of the loom and in a plane above the lower ends of the vertically movable members and a torsion spring fixedly secured to a portion of the loom at one end and surrounding the shaft and being secured to the shaft at its other end, means for imparting rotation to the shaft to store force in the torsion spring, each end of the shaft having a drum mounted thereon the pheripheries of which are in front of and disposed adjacent the grooves and one end of a flexible cord secured in each of the drums, the flexible cords extending downwardly in the grooves and having their lower ends secured to the lower ends of the vertically movable members for supporting the cloth roll pin.

Reediness in nylon fabric. W. Ellis Mann. *Am. Wool Cotton Reptr. 64,* 9 (Aug. 10, 1950); *Textile Bull. 69,* 81-3 (July 1950).

A hungry, reedy appearance observed in many pieces of finished, plain, woven, nylon fabrics is reported due to unevenness in the fabric by reed marks. A unique method for closing up reed marks and producing more uniform coverage consists in forcing the fabric around the edges of 2 or 3 angle irons to spread or move the warp ends over.

Releasable bearing for looms. Nicholas P. Darash (to The Warner & Swasey Co.). USP 2 514 152, July 4, 1950.

Relates to weaving looms and concerns particularly arrangements for handling the warp and cloth beam rolls thereon; provides a cam arrangement for roller type bearings to permit removal of warp beams and other relatively heavy rotatable members laterally and with relatively little lifting action.

Removal of fluff and dust in circular looms. Victor M. J. Ancet (to Regina S. A.). Can. P. 464 074, Aug. 28, 1950.

A method of eliminating fluff and dust from circular weaving looms which comprises sucking fluff and dust out of the warp threads, discharging it into the natural filtering bag formed by the sheath of fabric being woven on the loom, and continuously removing the fluff and dust from the loom in proportion as the woven fabric is wound up and removed.

Reversible fabrics.—. D. C. Snowden. *Wool Rev. 33,* 21-2 (Oct. 1949).

This article discusses some of the basic "reversible" fabric structures and suggests some modifications which may be of value to designers who are contemplating the production of such fabrics.

Selvedge marking equipment. A. Reggiani. Brit. P. 627 868, Aug. 17, 1949.

Apparatus for marking selvedges, or edges of knitted goods, by stamping in 2 or more colors with indelibly inked ribbons.

Sley movement in weaving. Hans Keller. *Textil-Rundschau 4,* 332-33 (Sept. 1949); *in German.*

Describes an investigation into the effect of the length of the crank shaft on the movement of the lay and thus on loom efficiency. A long crank shaft is better for high-speed looms, and a shorter crank shaft is preferred for looms operating at slower speed, e.g., jacquard looms. This is especially true when materials such as rayon are being run.

So you want good cloth! Frank D. Herring. *Textile Bull. 76,* 58, 60, 62 (Aug. 1950).

Part 15 of this series is a discussion of the tape selvedge motion. See also TTD: 7, 366 and 622.

So you want good cloth! Frank D. Herring. *Textile Bull. 69,* 75-8 (July 1950).

This is a detailed discussion of warp stop motions. (See also TTD: *6,* 366 and *7,* 621 for previous parts in this series.)

Take-up mechanism. John Rinne, Everett H. Ashton, Robt. G. Mallard & Francis G. Lake (to The M. W. Kellogg Co.). USP 2 518 185, Aug. 8, 1950.

In a take-up mechanism for a loom, a take-up roll gear, a take-up main drive shaft, and a gear transmission between the shaft and the gear comprising a pair of gear trains of different speed ratios arranged in parallel in the transmission, a gear shaft, a pick change gear, and means for operatively and removably mounting the pick change gear on the gear shaft and locating it in either

one or 2 reverse predetermined positions in drive relationship selectively with either one of the gear trains.

Tension for loom shuttles. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 518 961, Aug. 15, 1950.

In weft tension mechanism for a loom shuttle having a threader block with a thread passage therethrough, a pair of vertically extending tension pads mounted on the block, the pads having adjacent vertical edges around which the pads have angular movements when the shuttle is checked in its flight, and the pads having flat weft engaging faces which terminate out of vertical alignment with the edges and move apart to define a space for the threads when the pads have the angular movements.

Transferrer arm for weft replenishing looms. Carl P. Bergstrom (to Crompton & Knowles Loom Works). USP 2 519 817, Aug. 22, 1950.

In a transferrer arm for a weft replenishing loom operating with a reserve bobbin having a butt and a wound mass of weft, a part on the transferrer arm for engagement with the wound mass of weft a second part on the transferrer arm corresponding to the butt of the bobbin, a heel on the second part having a foot for engagement with the bobbin butt and having also a shank extending away from the foot, and removable means normally securing the shank to second part of the transferrer arm to hold the foot in bobbin butt engaging position on the transferrer arm, the foot being of such thickness that the first named part of the transferrer arm and the foot engage the yarn and butt, respectively, at substantially the same time during a bobbin transferring operation of the transferrer arm.

Two-color rayon bengaline. Anon. *Am. Wool Cotton Reptr. 64*, 9-10, 50 (Sept. 7, 1950).

A two-color rayon bengaline fabric is analyzed with details of its construction and manufacture. The fabric is soft and flexible and contains a warp of half viscose and a filling of acetate. This type of construction illustrates very well the great variety of effects obtainable from rayon yarns of similar denier but of different chemical composition.

Woven rayon fabrics. S. R. Roy. *Indian Textile J. 60*, 735-36 (June 1950).

The weaving of flat, crepe and spun rayon fabrics

is discussed. Also cited are the yarn treatments prior to weaving (sizing, etc.) and methods of obtaining the desired quality of the 3 types of fabric. Finally a brief description of finishing processes is given.

Knitting C 3

Cashmere, review. *Hos. Trade J. 57*, 52 (June 1950).

Brief review of production, processing, and employment in knitwear of cashmere and other "luxury" fibers.
HA

Cashmere review. *Hos. Trade J. 57*, 52 (June tralian P. 137 861, June 5, 1947.

A circular knit stocking comprising a heel in which there is present a plurality of tapered gussets arranged one below the other, each contiguous to the instep fabric, one of the gussets containing more wales in a plurality of courses than the longest course of a tapered gusset above it, whereby there is continuity of plain fabric from the instep of the stocking into the lower gusset, characterized by a plurality of strengthening partial courses in the heel separating the last circular knit course of the leg from the rest of the heel, one such course being interknit to the inner ends of all the tapered gussets in the heel.

Circular knitting machine design. E. Van de Casteele & J. Coorevits. *De Tex 8*, 642, 651 (Oct. 1949); *in Dutch.*

Describes the arrangement of the moveable cam for the heel in an automatic double-cylinder circular knitting machine. Diagrams.
HA

Circular knitting machine of the independent needle type. Edw. V. Stibbe & Bert Smith (to G. Stibbe & Co., Ltd.). Can. P. 463 734, Mar. 14, 1950.

In a circular knitting machine, in combination, a series of independent loop forming instruments, a multiplicity of angularly spaced feeds, a cam system including at least one adjustable cam at each of the feeds for effecting movements of the loop forming instruments, members to which the cams are attached, screws for adjusting the members, pinions on the screws, a common annular indexing gear with which the pinions are arranged in mesh, and means for turning the indexing gear and thereby effecting simultaneous adjustment of the aforesaid cams.

Elastic tape. Robt. Weinberg. USP 2 518 407, Aug. 8, 1950.

Elastic tape comprising inelastic selvedge portions, and connecting means between the selvedge portions elastically yieldable across the width of the tape and substantially inelastic lengthwise thereof, the means including a plurality of longitudinally extending elastic threads between the selvedge portions each having a continuous succession of loops formed therein and disposed substantially in a common plane with each other and with the selvedge portions, and a plurality of inelastic longitudinally extending knitted threads respectively interconnecting the loops of adjacent elastic threads at their closed ends with each other.

Elements of knitwear design. Inspiration from woven tweed. *Hos. Times 22*, 31-3 (Nov. 1949).

Describes types of design which can be carried out in knitted outerwear to match up with woven fabrics for twin-set and skirt ensembles. Diagrams.
HA

Fabrication of nylon sweaters. R. L. Voight & J. A. Newnam. *Knitter 14*, 38, 40 (Aug. 1950).

Suggested mill procedures are given for the fabrication of nylon sweaters. Topics covered are: yarn preparation, yarn handling and winding, knitting, garment cutting, assembling and fabrication, heat setting, and dyeing.

Full-fashioned survey shows fewer machines, same production. Anon. *Textile World 100*, 131 (Aug. 1950).

A series of charts and tables shows the results of Textile Machinery Works annual report. Graphs cover the following for the years 1930, 1940, 1950: 1) number of full-fashioned machines in U. S.; 2) number of machines according to gage; 3) number of machines according to territory; 4) number of full-fashioned mills; and 5) average number of machines per mill. Tables showing ages of machines of 1949 and 1950 are also included.

Heel and toe knitting. V. Skole & H. C. Andersen. *wear & Stockings 3*, 14-19 (Nov. 1949).

Review of heel and toe constructions in ladies' seamless and full-fashioned hosiery. Diagrams and illustrations.
HA

Heel and toe knitting. V. Skole & H. C. Anderson. Australian P. 137 635, July 6, 1950.

A method of knitting heel and toe in full-fashioned stocking comprises terminating the toe and/or heel portions with firm selvedges by continued narrowing until only a small number of wales are left and thereafter continuing knitting to form a tail extending outwards of the edge defining the toe or heel portion.

Hosiery length variation. *Underwear & Stockings 3*, 6-7 (Oct. 1949).

Discusses variation in leg length of hosiery, which is affected by the ultimate loop length and thus by the yarn tension. Even when tension of unwinding from the package is controlled, variations occur owing to differences in humidity and temperature, and in the speed of the machine which increases after it has been running for a while. Alteration in leg length occurring during seaming and finishing is also mentioned.
HA

Hosiery length measurement. *Hos. Und. Rev. 33*, 47-9 (June 1950).

Discusses problems involved in the practice of marking lengths on nylon stockings, both from the retailers' point of view, in maintaining a balanced inventory according to lengths, and from the manufacturers', in making accurate length measurements.
HA

Improved latch guard bracket for Komet machines. Ernest Bridges. *Textile Industries 114*, 181 (Sept. 1950).

A new style adjustable rear (or auxiliary feed) latch guard bracket for Komet machines is noted. The new bracket is much sturdier than the old one and is easier to fit and install.

Keeping track of every pair. N. F. W. Moser. *Knitter 14*, 28, 30 (July 1950).

Briefly describes the method whereby Berkshire Knitting Mills knits a code into each stocking indicating the building, floor, machine and shift on which the stockings were knitted. This is done by setting the buttons differently on the chain of the Reading full-fashioned knitting machine according to a predetermined system so that the space between the narrowings on the leg identify each pair.

Knitting machine. Geo. Wilders & John E. Lynam (to William Cotton, Ltd.). Can. P. 464 160, Apr. 4, 1950.

In a knitting machine having a hydraulic piston-

and-cylinder device for driving a member, such as a carrier, to and fro, the device including a piston rod protruding from an end of the cylinder, means for preventing leakage of hydraulic fluid along the protruding rod comprising a collector for leaking fluid and a pump and connections for returning the fluid to the hydraulic system.

Knitting machine (circular) wrap mechanism. Hemphill Co. Brit. P. 624 182, May 30, 1949).

Design of wrap horn for wrap stripe designs in double cylinder machines.

Knitting machine progress. I-V. J. B. Lancashire. *Textile Recorder 67*, 64-7 (Apr. 1950); 82-4 (May 1950); 79-81 (June 1950); 75-6 (July 1950); 75-7 (Aug. 1950).

This is a survey of developments in the 14 years since the *Textile Recorder* exhibition at Leicester in 1936. Topics covered are: 1—Knitting progress on circular machines: 2—full-fashioned machinery; 3—warp knitting machinery; 4—flat bar machines; and 5—seamless hosiery machines.

Knitting machine (circular) design. Interwoven Stocking Co. Brit. P. 622 637, May 5, 1949.

Seamless hosiery in which terry thread is used in heel, sole, and toe portions, and wrap embroidery pattern is formed on leg and instep portions.

Knitting machine (circular) stitch-regulating device. B. T. R. Reymes-Cole. Brit. P. 623 540, May 19, 1949.

Seamless hose, half-hose, or other circular machine with mechanism for producing a slack course by altering the relative height of the needle cylinder and stitch cam, and mechanism for adjusting the stitch length gradually down the leg.

Knitted fabric and method of making the same. Frank Y. Nakayama (to C. T. Takahashi). USP 2 519 493, Aug. 22, 1950.

The process of producing a textile from staple yarns containing a large quantity of kapok fibers, which comprises knitting 2 yarns into loops on both sides of the fabric to form, in the instance of each such yarn, a ply that interengages with a similar ply formed by the other of the 2 yarns and incorporating, unknit therein, a third yarn as an inlay yarn, and upon completion of the knitting operation softening the kapok fibers and then thread-picking the textile to raise the softened fibers at several points within their length.

Machine for and process of uniting looped fabrics. Philip Kaplan. USP 2 518 552, Aug. 15, 1950.

For use with a looper for stitching together the loops of separate knitted fabrics, which looper includes a stationary frame, a ring carrying impaling pins on its outer rim and revolubie on the frame, a sewing machine having a needle to engage an impaling pin and to form therewith a connecting link of thread between such loops, and means to stop and start the ring to revolve and the sewing machine needle to form a link with an impaling pin; an attachment including a loop guide carrier having a bottom plate fixed to the frame with radial loop guide grooves and a top plate slidable back and forth radially on the bottom plate and having a loop guide control finger slot extending over the grooves to move loop guides in the slots radially out and in; and a plurality of loop guides each having a control finger extending into such slot, a head of a width to span 2 adjoining impaling pins, each guide being slidable in a groove in the bottom plate which groove is positioned on a radial line extending between such 2 impaling pins.

Machine for fastening the meshes of mended knitted wear. Maurice A. Prodel. USP 2 518 638, Aug. 15, 1950.

A machine for fastening the meshes of mended knitted wear comprising a work supporting carriage, means for intermittently causing the carriage to advance through a length corresponding to ½ mesh of the ware and a needle adapted to move reciprocatingly in a direction perpendicular to the direction of progress of the carriage and to pass the fastening thread through the mended meshes.

Method for the manufacture of stockings and the like. Henri G. A. Leuliette. USP 2 485 004, Oct. 18, 1949.

A method for the manufacture of stockings, underwear, and the like, provided with reinforced portions, consists in weaving a fabric constituting a blank provided with reinforced portions which have the exact form of the reinforced parts of the finished blank, in cutting the blank from the fabric along the outline of the reinforced portions, and in uniting by means of a seam the edges of the blank. The sewing is effected, as regards the reinforced portions, along the edges of it.

Method of and means for closing the toe of circular knit hose. Jas. L. Getaz. USP 2 515 506, July 18, 1950.

A method of closing the toe of hose knitted on the needles of a circular knitting machine which comprises raising the knitted loops at the toe above the sinkers in the machine by raising the needles with their latches closed, placing adjacent the needles and below the latches thereof a band having on one side spaced projections which register with the needles, depressing the loops over the latches and onto the projections, lowering the needles to shed the loops therefrom, bringing together portions of the band to align pairs of the loops, and sewing through aligned pairs of loops.

Needle reverse plating of knitted fabrics. Jas. L. Getaz. USP 2 515 505, July 18, 1950.

In a circular knitting machine, a knitting cylinder, vertical grooves in the cylinder, independent needles in the grooves, hooks on the upper extremities of the needles, fulcrums for the needles, the needles being mounted in the grooves for rocking about the fulcrums in planes axial to the cylinder, means for rotating the cylinder, means for feeding a plurality of yarns to the hooks in plating relation, means for vertically reciprocating the needles at a given point to draw loops of the yarns to form knitted fabric, means for moving the hooks radially outward before the needles reach such knitting point, and means for rocking selected needles about the fulcrums to move the upper portions and hooks of the selected needles radially inward at such knitting point to change the plating relation of the yarns in the hooks of the selected needles from normal plating to reverse plating.

Needles, setting. *Hos. Und. Rev. 33*, 132-33 (June 1950).

Describes the "Knitmaster" needle gage, designed to give quick and accurate needle setting on latch needle machines; the gage is equipped with a Decker point to attach to the latch needle, and a dial which is graduated from 5/1,000 of an inch to half an inch. A new type of needle cleaner which combines cleansing properties with lubrication is also described.
HA

Nylon, yarn treatment. *Hos. Ind. Weekly 57*, 1, 20 (Apr. 24, 1950).

Note on method of "deep-freezing" nylon yarn claimed to give more uniform knitting, fewer "press-offs," fewer snarls, better "handle," and easier seaming.
HA

Patterning in circular knitting. *De Tex 8*, 654-55 (Oct. 1949) ; *in Dutch.*

Brief notes on patterning possibilities on circular knitting machines with cylinder and rib needles: constructions mentioned include the following:—purl stitch, double purl stitch, roll-welt stitch, and open-work patterning. Patterning on interlock machines is also discussed.
HA

Polyester fabric. Imperial Chemical Industries Ltd. Australian P. 137 938, July 27, 1950.

The production of improved fabric by a process comprising knitting yarn and/or continuous filament produced from one or more highly polymerized linear esters which have been obtained by heating one or more glycols of the series $HO(CH_2)_nOH$, where n is an integer greater than one and not exceeding 10, with terephthalic acid or an ester forming derivative thereof, which yarns or filaments have been heat set and relaxed by heating at a temperature equal to or greater than the temperature at which drawing took place and less, preferably at least 30°C less, than their melting point while they are held in a tension sufficiently small to allow limited shrinage.

Production of fabrics from polyester yarns. Imperial Chemical Industries Ltd. Australian P. 137 939, July 27, 1950.

The production of improved fabrics by a process comprising weaving fabric from yarns or continuous filaments produced from one or more highly polymeric linear esters which have been obtained by heating one or more glycols of the series $HO(CH_2)_nOH$ where n is an integer greater than 1 and not exceeding 10 with terephthalic acid or an ester forming derivative thereof, which yarns or continuous filaments have been heat set and relaxed by heating at a temperature at least 5°C higher than the temperature at which they have been drawn and less preferably 30°C less than their melting point.

Selvedge tester checks full-fashioned hosiery. Anon. *Textile Industries 114*, 127 (Sept. 1950).

The Premier Selvedge Length Tester is being used as a supplement to the Rolandé system of standards in checking and controlling length of hosiery in production. It shows whether both sides of the stocking are of equal length or how much difference is in evidence.

Sinker and divider functions. Jas. Walton, Jr. *Knitter 14*, 30, 32, 34 (July 1950).

Discusses the functions and methods of activation

of sinkers and dividers.

Stitch-shaped garments. VI. Garment making on the RTR machine. J. B. Lancashire. *Hos. Times 22*, 41-5, 56 (Nov. 1949).

Details of cam arrangement and operation and of knitting movements, section by section, throughout the parts at which stitch changes take place in the knitting of a stitch-shaped vest. Diagrams. HA

Straight bar knitting machine. Wm. G. Macdonald & Wm. A. Cooper (to William Cotton Ltd.). Can. P. 464 318, Apr. 11, 1950.

A straight bar knitting machine, having a single frictional device for driving a plated splicing carrier from a draw or Coulier mechanism, stops or their equivalent for variably determining the length of traverse of the carrier, and means for disconnecting the carrier from the frictional device in the region of the end of the carrier traverse and for re-establishing the connection at the commencement of the carrier traverse in the reverse direction.

Uniform tension attachment for knitting machines. David M. Harman. USP 2 518 615, Aug. 15, 1950.

A thread tensioning device for knitting machines having an oscillatory tensioning shaft and a relatively stationary bar parallel thereto, comprising a pair of brackets fixed on the shaft, a plurality of parallel tensioning bars carried by the brackets for oscillation therewith, the bars being disposed at varying distances from the axis of the shaft and being relatively movable with respect to the relatively stationary bar.

Use of nylon in hosiery. *Hos. Und. Rev. 33*, 164-66, 202-03 (Apr. 1950).

Discusses the effect that the introduction of nylon has had on stocking manufacture. Special reference to single unit machines, pre-boarding, and the trend towards high gages. HA

Yarn, conditioning. Reymes-Cole's Patents Ltd. Brit. P. 625 032, June 21, 1949.

Process for conditioning yarn, particularly nylon yarn during knitting, by passing through a foam produced by passing air into a soap solution.

Special fabrics C 4

Apparatus for producing tubular fabrics. Saml. P. Parker (to Callaway Mills Co.). USP 2 517 021, Aug. 1, 1950.

In a loom for weaving a tubular fabric of a filling yarn interwoven in upper and lower levels alternately with warp yarns, the loom having harness mechanism for forming successive sheds of the warp yarns and a reed for beating up picks of filling, the combination of a bar disposed transversely within the fabric adjacent the fell to hold the fabric to full width, a pair of parallel wires extending warpwise through the reed and attached to respective ends of the bar, springs attached to the ends of the wires remote from the bar and connected to a fixed part of the loom structure, and means for raising the wires into the lower part of the shed upon successive shedding operations of the harness mechanism.

Carpet producing machine. A. C. Groser. Australian P. 137 642, July 6, 1950.

A machine in which a pile is formed on a backing material by a needle comprises a carriage for the backing material and means for intermittently transversing the carriage sideways, means for forming loops, means for holding and cutting the loops and means operable by the arrival of the carriage in either of the extreme sidewise positions, for advancing the carriage and reversing the direction of the intermittent sidewise traversing thereof. A method of mechanically producing carpet by forming loops on a backing material is also claimed.

Construction of warp tapestry fabrics. J. Cowburn. *Textile Mfr. 76*, 372-74 (Aug. 1950).

The 4-warp, 3-weft combination lends itself admirably to the production of a wide range of effects, and with so many possibilities at the disposal of the designer an infinite number of totally different designs can be produced on the same warp. The advantages of this weave are described and the items which will increase the cost of production are enumerated.

Control for axminster loom tube frame conveyer systems. Walter H. Wakefield (to Crompton & Knowles Loom Works) USP 521 430, Sept. 5, 1950.

In an Axminster loom provided with a tube frame conveying system having two driven sections, pullover mechanism periodically moving one of the sections, a continuously running motor having driving relation with the other section only and separate from the loom, and speed control means for the motor jointly controlled by the two driven sections causing the motor to drive the other section at an average speed equal to the average speed at which the pullover mechanism moves the

one section.

Cotton In The Soft Floor Covering Industry. Part I: The Cotton Rug Industry, by John A. McCrossan, Jr.; Part II: The Wool Carpet and Rug Industry, by Raymond Steinbach, Jr. Memphis, Tenn., National Cotton Council of America, September 1950.

This survey of cotton in soft floor coverings was initiated as a means of compiling more factual information on end use applications of cotton from the standpoint of quantities consumed, quality and price considerations, and advertising and merchandising practices. The information summarized in this report is for the use of the raw cotton industry and other groups, organizations, and individuals interested in research and sales activities to strengthen and expand cotton's market position in rugs and carpets. Since fiber usage and competitive factors are different in the 2 industry segments which produce soft surface floor coverings, the survey was conducted in 2 parts: Part I: The Cotton Rug Industry and Part II: The Wool Carpet and Rug Industry.—*Foreword.*

Daylight fluorescent fabrics. Anon. *Am. Wool Cotton Reptr. 64*, 49, 51 (Aug. 24, 1950).

Discusses the properties of "daylight fluorescent" fabrics and goes into the patent situation involved in these materials in some detail. Due to a somewhat complex situation with regard to patents a number of infringements has resulted.

Elastic fabric. Philip J. Ahlers. USP 2 518 110, Aug. 8, 1950.

An elastic woven fabric comprising warp threads interlaced with regular successive series of weft or filling threads, each of these series comprising in sequence an elastic thread, a staple spun thread of smaller diameter and a continuous synthetic filament thread of still smaller diameter.

Fabrics, hats and method of making the same. Geo. M. Rickus (to Hat Corp. of Am.). Can. P. 463 433, Feb. 28, 1950.

A fabric consisting essentially of a mixture of wool fibers, fur fibers and prolon fibers suitable for felting derived from soy protein of relatively high molecular weight, the mixture of fibers being intimately felted together.

Loom. Robt. E. Walliser (to Libertyville Textiles, Inc.). Can. P. 464 190, Apr. 4, 1950.

In a loom adapted to weave a weft thread between advancing warp threads, a plurality of needles mounted for movement forwardly and rearwardly of the warp threads, means for bringing the needles into engagement with a portion of the warp threads, mechanism for advancing the needles to form a loop in each of the engaged threads, and a plurality of knives equal in number to the needles, each of the knives being movably mounted adjacent a needle and operative to cut the loops formed by the needle.

Loom with stationary weft supply. Jas. Manning. USP 2 502 735, Apr. 4, 1950.

This invention relates to improvements in looms for weaving employing a stationary weft supply, the weft being inserted by a member carried by an arm oscillating forwards and backwards through the shed, the shed being changed every 2 picks, i.e., after each complete forward and backward movement of the arm. In looms of this type the interweaving of the weft with the warp threads does not form a selvedge at one edge of the cloth and it is necessary to provide means for forming a selvedge along such edge. According to this invention the aforesaid selvedge is formed by a shuttle which is oscillated or reciprocated at the edge of the warp threads and at right angles thereto to insert a binder thread in the loop of the weft formed between each pick at the opposite side of the warp to that in which the weft inserting member enters the shed.

Manufacture of seamless Wilton carpet. A. Crossland. *Textile Mfr. 76*, 363-68 (Aug. 1950).

Describes 2 weaves used in the structure of Wilton carpets, the special features of the cordage type jacquard, and a well-known make of seamless carpet loom.

Manufacture of sweaters from spun nylon yarns. Anon. *Textile Age 14*, 26-9 (Aug. 1950).

Suggestions for the yarn preparation, winding, knitting, assembling, heat-treating, and dyeing sweaters made of spun nylon yarns are presented.

Nature's influence on woven design. Abd El L. M. Bayoumi. *Textile Mfr. 76*, 396, 397, 398, 400 (Aug. 1950).

The design and construction of floral designs is discussed. The operation of twilling jacquards is described in some detail.

Neutralized oxidized cellulose products. Leonard Doub & Walter H. Seegers (to Parke, Davis & Co.). USP 2 517 772, Aug. 8, 1950.

A surgical dressing comprising an aggregate of individual fibers of cellulose impregnated with thrombin, the cellulose being partially oxidized by gaseous NO_2 to the extent that it is absorbable

in body fluids and being neutralized to the extent that the cellulose placed in about 100 times its weight of water gives an aqueous mixture having a pH between 5.5 and 7.5.

New device stops reediness in nylon. W. Ellis Mann. *Textile World 100*, 99 (Aug. 1950).

A "temple" made of angle iron mounted all the way across the fabric close to the reed will eliminate much of the reediness in nylon fabrics. This also makes the dyeing more uniform. Illustrated with picture of the fabric and diagram.

Pile fabric frayproofing. Jas. N. Dow & Ara T. Dillian (to Bigelow-Sanford Carpet Co., Inc.). USP 2 517 389, Aug. 1, 1950.

The method of frayproofing a pile fabric having pile tuft loops concealed in a densely woven backing fabric which includes applying to the back of the fabric a film of an adhesive supported on a carrier, the adhesive including a thermoplastic binding agent and a liquener, the liquener having a vapor pressure between 0.5 and 8.0 mm. Hg at 30°C, liquefying the adhesive by applying heat to the back of the carrier to cause the adhesive to penetrate into the densely woven backing of the fabric so far as to moisten the loops of the pile, and then removing the carrier.

Process for improving the wear resistance of fabrics. Wm. F. Osborne (to Imperial Chemical Industries Ltd.). Can. P. 463 567, Mar. 7, 1950.

A process for improving the wear resistance of fabrics containing yarns made up of fibers from the group consisting of wool, cellulose, regenerated cellulose or regenerated protein fibers, which comprises introducing into the fabric between 10% and 75% by weight of yarns composed of a highly polymerized polymethylene terephthalate having n carbon atoms in the polymethylene nucleus, n being 2 to 10 inclusive.

Tufted dot fabric. Leonard A. Stanley (to The Kendall Co.). USP 2 517 529, Aug. 1, 1950.

A washable tufted dot fabric having a woven ground and a plurality of spaced groups of fibers anchored to the ground fabric and individually upstanding therefrom in the form of soft, fluffy tufts forming a pattern of raised dots on the fabric ground, the tuft fibers being rendered resistant to matting and flattening in laundering by carrying at least about 2% by weight of a water-insoluble condensation product of a thermosetting resin selected from the group consisting of the water-soluble monomers and water-soluble low

polymers of the methylol ureas, the water-soluble methylol melamines and the water-soluble low-molecular-weight-alkyl ethers of the methylol ureas and the methylol melamines.

Viscose rayon lubricating treatment for industrial uses. Wm. B. Carden. Can. P. 463 943, Mar. 28, 1950.

The process of producing viscose rayon fabric which consists in film coating viscose thread strands with a non-penetrant lubricating oil, providing of the strands of multiple strand assembly, film lubricating the assembly with a non-penetrant oil, twisting the strands to form yarn, manipulating the yarn to provide fabric, and entirely coating the fabric with flexible impervious rubber to prevent lubricant dissipation.

Wearing apparel. Wm. W. Artzt (to Lisle Mills, Inc.). USP 2 519 534, Aug. 22, 1950.

An undergarment formed of a knitted fabric comprising an integral body portion having front and back sides, one of the sides having a longitudinal zone of a knit more yieldable laterally than adjacent portions and the remainder of the body portion and including a crotch portion of the same knit as the zone and being joined with the other side of the body portion.

Woven elastic fabric. P. Horace Boivin (to Granby Elastic Web of Canada Ltd.). Can. P. 464 046, Mar. 28, 1950.

A woven fabric consisting of not less than 40 nor more than 60 elastic rubber threads per inch in the warp and not less than 40 nor more than 60 non-elastic threads per inch in the weft, the warp threads having a size of from 40 to 80 counts in rubber count, the fabric having a capacity to stretch of 60 to 120% in the warp direction and from 10 to not more than 40% in the weft direction.

Inspection and testing C 5

Sequential sampling for better quality control. Norbert L. Enrick. *Am. Wool Cotton Reptr. 64*, 17-18 (Aug. 24, 1950).

A new cost savings method of inspecting and testing goods, both yarn and cloth, known as sequential sampling is described. This method, as compared to ordinary methods cuts inspection and testing in half without loss of reliability of results.

Tufting machine. Saml. P. Parker (to Callaway Mills Co.). USP 2 485 163, Oct. 18, 1949

The present invention is directed to the provision

of a tufting machine which overcomes the difficulties involved in the operation of prior machines and enables the operator to insert tufts in the backing material in any direction, as desired, and without stopping the machine or turning the material. In the machine, the backing material is held in place only for a part of each reciprocation of the needle and is then released, so that the operator may shift it as he wishes. Although each loop inserted is severed before another loop is passed through the material, each loop is retained in place by the looper while the needle is being retracted, so that the loop is not pulled free of the backing.

Know your mill processes to identify fabric defects. J. B. Goldberg. *Textile World 100,* 104-05, 222, 224 (Aug. 1950).

Fabric defects can be caused by mixing raw materials or yarns that should be kept separate; by faulty machine adjustments, such as speed, pick gear, or slasher temperature; incorrect yarn preparation, such as crossed ends in slashing, wrong draw through harness, or improper reed selection; and filling imperfections, such as mixed filling, sharp feeler motions, or cut shuttle eyes. Ten photomicrographs illustrate different fabric defects.

Fabric applications C 6

Airplane fabric and method of manufacturing air frames. Alfred Dryling & Chas. W. Johnson (to E. I. du Pont de Nemours & Co.). USP 2 517 852, Aug. 8, 1950.

A predoped airplane fabric characterized by a high degree of suppleness and pliability having a precipitated coating thereon of a composition having the following formula: cellulose nitrate 29.0, castor oil 5.8, polyvinyl alcohol 0.6 and isopropyl naphthalene sulfate 0.2.

Electric blanket sewing machine. Chas. E. Johnson & Edw. E. Woller (to Simmons Co.). USP 2 518 147, Aug. 8, 1950.

In apparatus of the class described, the combination of means for supporting portions of a pair of blanket plies in substantially co-planar, juxtaposed relationship, the portions extending from side to side of the plies, means for advancing the blanket plies step by step so as to successively position spaced, parallel portions of the respective plies on the supporting means, a blind stitch sewing machine, means supporting the sewing machine for movement lengthwise of the co-planar

blanket portions and in such relation thereto as to be operative to stitch through only a part of the thickness of the co-planar blanket portions, means for simultaneously actuating the sewing machine and propelling the same lengthwise of the co-planar blanket portions to thereby unite the same, and means automatically actuating the blanket ply feed means and reversing the direction of travel of the sewing machine upon the completion of each row stitching uniting the respective pairs of the juxtaposed portions.

Endless transmission belt and method of making. Arthur S. Brown & Gertrude E. Sedgley. USP 2 518 220, Aug. 8, 1950.

An endless seamless belt having a body of woven textile fabric which is impregnated with rubber latex compound and is free from sizing and oils that have a deleterious effect on such rubber latex compound, one side at least of the body being coated with a thin wafer-like coating of rubber having a thickness on the order of .010".

Fabric-base plastics. K. W. Pepper & J. R. Riddell. *J. Soc. Chem. Industry 69,* 195-201 (July 1950).

The strength of laminated plastics derives mainly from the fibrous reinforcement, but the fibers, being arranged in layers, cannot contribute to the interlaminar strength. The consequent weakness is revealed by a low cross-tensile strength and a low shear strength parallel to the laminations. Three methods of test which have been used with laminates ¼ in. thick are described and compared; with material greater than ¾ in. in thickness, 2 additional tests may be employed. Interlaminar strength, in common with other properties of reinforced plastics, is sensitive to variations in the moisture content of the impregnated reinforcement at the time of pressing. The beneficial effects of desizing and scouring are conclusively proved. While the scouring process used does not appear to be highly critical, desizing by itself is not an adequate pre-treatment. Absence of twist in the threads of a fabric does not contribute to higher interlaminar strength.

Filter fabric structure and process of making same. John Overbeke. USP 2 517 704, Aug. 8, 1950.

A fabric structure for utilization in a filter, the structure comprising 2 textile fabric sheets having aligned openings therein and a hollow cylinder of textile fabric joining the sheets at the openings to provide communication between the openings, the fabric cylinder having its ends cut on a bias to

the longitudinal axis of the cylinder and flared out to provide a flange extending uninterruptedly around each of the ends, the flanges being abutted against the sheets around the openings, a textile fabric washer around each end of the cylinder and over-laying the outer peripheral edge of the flanges, and threads securing the flanges, washers and sheets, respectively, together continuously around the cylinder.

STANDARD FINISHING D

Action shots picture key steps in finishing cotton. Anon. *Am. Wool Cotton Reptr. 64,* 20-1 (Aug. 24, 1950).

The story of the passage of cloth from the gray room through Sanforizing at the Millville Mfg. Co. plant is told in a series of photographs.

Bleaching of jute. M. K. Mitra. *Indian Textile J. 60,* 636-39 (May 1950).

The advantages and disadvantages of bleaching jute with hypochlorites, peroxides, permanganates and sodium chlorite are cited. The methods used in each of these cases are also given.

Bleaching staple fiber rayon. W. Hundt. *Textile J. Australia 24,* 522, 524, 526 (Aug. 1949). English translation of *Textil-Praxis 4,* 26 (Jan. 1949).

See TTD: 7, 216.

Cellulose glycolate in finishing. A. Foulon. *Kunstseide und Zellwolle 28,* 117 (1950); *in German.*

Describes the use of this cold water-soluble material as a sizing. Cellulose glycolate can be blended with starch solutions; it is also resistant to alkalies and salts.

Chemistry of starch. Anon. *Textile Mercury & Argus 103,* 262 (Aug. 18, 1950).

Certain starch ethers obtain excellent results in the sizing of viscose and acetate yarns.

Cotton yarn finishing. Schlumpf & Son. *De Tex 8,* 629-30 (Oct. 1949); *in Dutch.*

Describes new machine for the soaping, scouring, rinsing, strengthening or sizing of cotton or linen yarn.
HA

Desizing and sizing. Irving Teplitz. *Textile Bull. 69,* 83-4, 86 (July 1950).

This is a practical discussion of desizing and the materials and methods used.

Detergents on test. Foster D. Snell. *Brit. Rayon & Silk J. 27,* 45-6 (Aug. 1950).

Description of investigations into the efficiencies of detergents with special reference to "builders." 15 references.

Developments in rayons and synthetic fibers. Anon. *Skinner's Silk & Rayon Rec. 24,* 1086, 1088, 1093, 1095 (Aug. 1950).

This review of recent developments covers the following: 1) increased water-fastness of dyed cellulose fiber materials, 2) uniform steaming, 3) fast anti-mildew finishes, 4) single bath dyeing wool-rayon mixtures, 5) substitutes for gum tragacanth, 6) lubricants for acetate rayon yarns, and 7) acetate rayon receptive to acid wool dyes.

Digest of research results. II—New facts about wool felting. A. J. Hall. *Textile Mercury & Argus 123,* 181-2, 185, 187 (Aug. 4, 1950).

This digest of research results on wool felting covers the following topics: Influence of fiber packing on wool felting; new test for felting wool tops; influence of felting liquor; effect of pH on degree of felting; felting properties of wool union materials; diluent fiber may promote greater felting; felting in organic liquors; use of resins to reduce felting; how the resins act; effect of resin treatment on fiber roughness; spot-bonding of wool fibers in resin treated wool fabric; distribution of the resin; new facts about the epithelial scale; and the Allworden test.

Finishing machinery. Anon. *Am. Wool Cotton Reptr. 64,* 11-12 (Aug. 24, 1950).

A review of the many new developments and improvements in bleaching, dyeing, and finishing machinery introduced to the textile industry in recent months is presented. Included in the review are a new tenter range, flexible washer, tension-less scouring machine, the Tensitrol rope washer, the Versamatic semi-decating machine, etc.

Finishing of nylon fabrics in the U.S.A. F. Schläppi. *Textil-Rundschau 5,* 135-40 (Apr. 1950); *in German.* English summary in *Brit. Rayon & Silk J. 27,* 75-6 (July 1950).

Describes nylon finishing practices in the U.S.

Hosiery finishing. Anon. *Am. Wool Cotton Reptr. 64,* 55, 57 (Aug. 24, 1950).

The importance of each operation in hosiery finishing is stressed. The dyeing, bleaching, boarding, mating and inspecting, bonding, labeling, and boxing of hosiery are discussed.

Machine for raising and curling of the nap of fluffy cloths and nap cloths generally. Bruno Sonnino (to Societe Anonyme "Manta"). Can. P. 463 344, Feb. 21, 1950.

A machine for the raising and curling of nap on fluffy cloths, comprising means for supporting cloth to be treated, jet means for projecting a gaseous fluid on the cloth supported by the supporting means, means for supporting the jet means in spaced relation to the cloth, and means for causing relative movement between the jet supporting means and the cloth, the machine comprising in addition transporting means bearing one or more nozzles connected to a source of pressure by means of flexible piping, the transporting means running on a rail frame and being acted on by a motor mounted on the frame, the motor, by means of endless chain transmission, causing reciprocating movement of the transporting means along the rail, for the purpose of directing and dis along the rail, for the purpose of directing and distributing the jet, either normally of obliquely in any direction with respect to the plane of the cloth to be treated, along with its whole width, the rail frame at each end of stroke of the transporting means being advanced on longitudinal guides fixed on a frame on which a metal net is stretched carrying the cloth to be treated.

Mechanism for controlling web material. John F. Bannon. USP 2 521 440, Sept. 5, 1950.

A fabric treating apparatus which comprises a J-box having an intake leg, and an open outtake leg, a feed mechanism, a motor for driving the feed mechanism, a motor for driving the feed mechanism, an upper displaceable element and a lower displaceable element in the intake leg in position to be displaced by the weight of fabric at the heights o fthe elements respectively, a control circuit for the motor comprising an upper switch actuated by the upper displaceable element to open the circuit when the element is literally displaced, a lower displaceable switch to open upon displacement of the lower displaceable element, electro-magnetic means to maintain the circuit closed between the opening of the lower switch and the upper switch, a swinging guide to lay the fabric transverse layers crosswise substantially throughout the width of the intake leg against the upper displaceable element and a deflector above the upper displaceable element and a deflector above the upper displaceable element extending inwardly thereover to prevent freely falling fabric from striking the displaceable element directly.

Modern textile auxiliaries. A. J. Hall. *Skinner's Silk & Rayon Rec. 24,* 1062, 1066 (Aug. 1950).

Continues the listing of textile auxiliaries, giving properties, formulas, uses, and manufacturers. See also TTD: *7,* 384, 480, 558 and 734.

Nylon hosiery finishing. *Hos. Und. Rev. 33,* 66 (June 1950).

Discusses the "nylonizing" process developed by H. C. Bick, Inc. for the finishing of nylon hosiery. Stockings treated with this finish are claimed to have the warmth, absorption and fit qualities of silk, and to have a dull finish and good snag resistance. Application to nylon underwear fabrics is being investigated.
HA

One-step stripped wool process. Lee W. Rainard & Milton Harris. *Am. Wool Cotton Reptr. 64,* 13-14, 18 (Aug. 24, 1950).

In a discussion of the development and advantages of the Harris-trip process, it is shown that wool textiles may be stripped so that the treated fibers are firm, strong, resilient, and retain desirable hand. In addition, the wool also acquires a marked increase in resistance to attack by chemicals and alkalies.

Overfeed and internal expander for fabric in tubular form. Frederick C. Wedler (to Am. Viscose Corp.). USP 2 517 067, Aug. 1, 1950.

A device for spreading and stretching tubular fabric.

Quality control in bleach house. A. M. Mehta. *Indian Textile J. 60,* 740-41 (June 1950).

The criteria essential to produce consistently uniform fabrics free from such defects as color bleeding, discoloration by perspiration, excessive shrinkage, yellowing, mildewing, etc. are cited. These include: 1) size analysis on the grey fabric; 2) water analysis; 3) evaluation of chemicals, finishing materials and auxiliaries; 4) testing of processing liquors; 5) establish suitable processing conditions; and 6) evaluating the finished fabrics.

Selection of surface—active agents. I—II. Irving Teplitz, *Textile Age 14,* 22-5 (June 1950); 20-2 (July 1950).

Part I—The properties and uses of various soaps, synthetic detergents, and wetting, levelling, and dispersing agents in dyeing and finishing are discussed. Part II—This second of 2 articles concludes a discussion of the properties and uses of synthetic detergents and wetting agents.

Sensitivity is the secret of dryer efficiency. Leo Walter. *Textile World 100*, 100-01, 200, 202 (Aug. 1950).

Uneven distribution of surface temperature and friction of the detecting controller are difficulties in automatic temperature control of cylinder dryers. Control action takes place when the temperature differs from the desired temperature. There are several types of temperature detectors and humidity detectors. For hot-air dryers, the drying temperature of the outlet air and of the drying space air should be controlled. Definite humidity conditions are also needed. Gradual or throttling control is usually used rather than "on" and "off". The exact type of control will depend on the use to which it is to be put. Several are mentioned. The first requirement for automatic controls is that the drying process itself be efficient. Illustrated with several diagrams.

Sizing of yarns. John H. Strong. *Textile Mercury & Argus 103*, 267-69, 271 (Aug. 18, 1950).

Practical guidance in the sizing of yarns, English methods, with some attention to air-drying methods.

Soaps and detergents as affecting textiles. Foster Dee Snell. *Can. Textile J. 68*, 50-2, 55-6 (Aug. 4, 1950).

Many hundreds of synthetic detergents are now available to the textile industry and systematic and unbiased application research is needed to bridge the gap between science and the art.

Sources of trouble in carbonizing wool and woolen goods. Part I. *Textile J. Australia 24*, 490, 492, 494, 498 (Aug. 20, 1949). English translation of *Textil-Praxis 4*, 187-89 (Apr. 1949).

See TTD: *7*, 556.

Strengthening of cellulosic yarns with salts of carboxymethyl cellulose. E. F. Z. van Zelst. *De Tex 9*, 286-89 (Apr. 1950); *in Dutch.*

Review of properties of sodium carboxymethyl cellulose and its uses in the textile industry, particularly for the strengthening of cotton and rayon yarns.

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Stripping nylons with sodium chlorite. W. C. Peurifoy, Jr. *Textile Age 14*, 50-1 (Aug. 1950).

An abstract of an address before the AATCC on the stripping of nylon hosiery with sodium chlorite is given.

Study of mercerizing process. R. A. Gogate. *Indian Textile J. 60*, 563-64, 571 (Apr. 1950).

Methods of carrying out the mercerization process are described. The effect of tension on this process are also discussed.

DYEING AND PRINTING E

Dyeing

Affinity of Perlon (German equivalent to nylon) for acid dyestuffs. K. Anacker. *Textile J. Australia 24*, 148, 150-51 (Apr. 20, 1949); *in* English. *Melliand Textilber. 29*, 348-50 (Oct. 1948); *in German.*

The affinity of a number of acid dyes for Perlon was determined both in respect to monosulfonic acids as well as for disulfonic acids. When combinations of these 2 were applied, it was found that the latter were very loosely attached to Perlon and could be replaced by the more firmly attached monosulfonic acids even after absorption by the fabric. Acid dyestuffs must therefore be carefully selected for practical application.

Apparatus for printing on fabrics, paper, or the like. Frantisek Jáne. USP 2 485 289, Oct. 18, 1959.

The apparatus according to this invention provides a table on which the fabric is stretched by using guiding and/or driving rollers, wherein the dimensions of the tables do not need to depart much from the dimensions of a printing stencil. Printing stencils are arranged about an axis in such a manner that each of them after having completed its print can be raised and turned to the side so as to permit a differently colored stencil to print on the same base. It is further possible to place around the turning axis of the printing stencils a number of tables and on every one of them to print in succession with the same set of printing stencils. After finished printing with all colors and shifting of the fabric, the operation may be repeated for the following part of the fabric.

Automatic control in the dyehouse—III. Leo Walter. *Dyer 104*, 243, 245, 247, 248 (Aug. 25, 1950).

See also TTD: *7*,

Check on your print washing. T. N. Patrick. *Textile World 100*, 127, 216, 218, 220, 222, 224 (Aug. 1950).

Water supply is the most important single item. Three main types of water treatment, zeolite, lime

soda softening, and flocculation and precipitation are discussed briefly. The best use of steam through heat exchangers is described. After treatments from cold water wash without additions to the use of strong oxidizing agents and rinsing and soaping at the boil are discussed. Types of finishes and fabrics for each treatment are mentioned. The use of oxidizing agents in the production of vat colors is described. Small plants can use water softening agents such as soda ash or meta-phosphates. The effect of temperature control in any hot processing is discussed. Open width washers and slack rope washers are compared.

Choice of package dyeing. B. B. Gandhi. *Indian Textile J. 60*, 572-78 (Apr. 1950).

The methods, relative merits and resultant economies of cheese versus cone versus beam dyeing are discussed. Some attention is given to loose fiber dyeing and extraction and drying of hanks, cheeses, etc. The equipment required for package dyeing is described.

Colored fabric. Robt. G. Dort (to Camille Dreyfus). Can. P. 463 753, Mar. 14, 1950.

In a process for the production of colored, fluorescent artificial filamentary materials of high color intensity under visible as well as ultraviolet light illumination, the step of dyeing cellulose acetate filamentary material having incorporated therein a finely divided pigment consisting of zinc sulfide fluorescent in a red color, with an aqueous formic acid solution of a fluorescent dyestuff consisting of the hydrochloride of diethyl-m-amino-phenolhpthalein.

Differences in stretch during the production of rayon—a cause of streaky dyeings. Anon. *Kunsteide und Zellwolle 28*, 132 (Apr. 1950). Through *Brit. Rayon & Silk J. 27*, 67 (June 1950).

The investigation arose from a practical case, where difficulties were encountered in the dyeing of a delivery of viscose rayon. In spite of careful preparation dyeing was entirely unsatisfactory, with dark and light streaks abundant. In order to eliminate the possibility of interference by products imparted to the yarn after spinning, the yarn was carefully and intensively scoured with soap and soda, with addition of a solvent, bleached and scoured. Microscopic tests showed that there was no difference between the dark and light places which still resulted during dyeing in spite of the intensive preparation. The dark and light material was then separated and tearing and extensibility tests were carried out. These showed that the lighter parts were less extensible than the darker parts. It is evident that the lighter parts had been stretched more in manufacture than the darker parts. The only means of overcoming this difficulty is to relax the yarn fully by swelling in caustic soda. A 0.4% solution was used, the yarn being treated for ½ hour at 30°C.

Diffusion of direct dyes into cellulose. J. Crank. *J. Soc. of Dyers and Cols. 66*, 366-74 (July 1950).

Some recent theoretical papers concerned with the diffusion of direct dyes into cellulose are reviewed. Mathematical solns. of the diffusion equation applicable to dyeing with a restricted amount of dye, as in commercial practice, are presented in a form suitable for calculation. Several examples of calculated rate-of-dyeing curves, suitable for direct comparison with measured rates of dyeing from a commercial dyebath, are shown. Attempts to provide a quantitative theoretical explanation of the experimental facts about rate of dyeing are discussed. The picture of dye diffusion in cellulose, which seems to be emerging as a result of recent work, is described.

Digest of research results. I—The coloration of acetate rayon. A. J. Hall. *Textile Mercury & Argus 123*, 145, 147, 149, 151 (July 28, 1950).

This digest was prepared as a means of placing at the disposal of those engaged in textile production information obtained from the increasing amount of research being done on textile problems. New dyes for the dyeing of acetate rayon and new methods of dyeing acetate rayon are discussed.

Digest of research results. IV—The dyeing of nylon. A. J. Hall. *Textile Mercury & Argus 103*, 255-56, 258 (Aug. 18, 1950).

Thio-phenol compounds can be used in the dyeing of nylon goods. According to Brit. P. 640 421, the treatment of nylon with a thio-phenol compound has the effect of making the nylon resist direct cotton, acid wool, sulfur, chrome and vat dyes. On the other hand, if the nylon has already been dyed with one or another of those types of dyes, the treatment with a thio-phenol compound will not loosen the affinity between the fiber and dye but will make the dyeing faster to washing. In one example cited by the British patent, a thio-phenol compound is made by heating together for 30 hours at about 103°C a mixture containing 180 parts of phenol, 80 parts of sodium hydroxide and 170 parts of sulfur. For treatment of the nylon, some 10 parts of this thio-phenol compound are discussed with 4 parts of sodium carbonate and 2

parts of sodium hydrosulfide in 1,000 parts of water at the boil. Following this treatment, the yarn is no longer able to be dyed with direct cotton, acid wool, vat and sulfur dyes. Increased fastness to washing is obtained by the following treatment: nylon yarn already dyed with Azo Rubinol 3 GS or Alizorine Light Blue 4 GL is heated for 15 to 20 minutes at 80° to 100°C in a liquor containing 10 parts of the thio-phenol compound mentioned above.

Dyeing of cellulose esters with reduced vat dyes in alcoholic solution. Edw. R. Laughlin & Raymond W. Foulk (to E. I. duPont de Nemours & Co.). USP 2 518 153, Aug. 8, 1950.

A process of dyeing cellulose esters with vat dyes, which comprises padding the cellulose ester material for a period no more than 10 sec. with an aqueous alkaline solution of a reduced vat dye containing in the solution from 30% to 60% of alcohol, and, for each gallon of dye liquor, alkali in an amount equivalent to no more than 2.0 ounces of potassium hydroxide, from 0.1 to 4 ounces of a wetting agent, 0.25 to 4 ounces of a dispersing agent and from 0.25 to 4 ounces of a stabilizing agent of the group consisting of diethylene glycol, thiodiethylene glycol and glycerine, maintaining the pad bath temperature between 110°F and 150° F and, immediately after padding, passing the material into an aqueous solution having an alkalinity below that at which saponification of the cellulose ester takes place, and oxidizing the reduced vat dye on the material.

Dyeing cellulose derivatives in the presence of inorganic thiocyanates and organic acids. Geo. W. Seymour & Geo. C. Ward (to Celanese Corp. of Am.). USP 2 518 644, Aug. 15, 1950.

Cellulose acetate is dyed using a dye bath containing 20-40% of acetic acid and 3-10% of sodium thiocyanate.

Dyeing of cellulose derivative textile materials with an acid dye in a swelling solution followed by washing with an aqueous salt solution. Henry C. Olpin & Edmund Stanley (to Celanese Corp. of Am.). USP 2 519 498, Aug. 22, 1950.

In a process for the coloration of textile material selected from the group consisting of cellulose esters and cellulose ethers by impregnating the material with a solution of a dye in a liquid containing a substantial proportion of a water miscible organic liquid, and which is a swelling agent for the cellulose derivative, the dye being an acid dye which is aggregated in water to a small

degree at most, has substantially no affinity for the cellulose derivative when applied thereto as a solution in water and is readily removed from the swollen material by washing with water, the step of de-swelling the dye-impregnated material and fixing the dye therein by washing the impregnated material with an aqueous solution of an inorganic salt, the salt being substantially without swelling action on the cellulose derivative and being capable of reducing the solubility of the acid dye in water.

Dyeing knitted fabrics. I-II. Von Lint. *Melliand Textilber. 31,* 115-17 (Feb. 1950); 273-78 (Apr. 1950); *in German.*

The aim of the present article is to provide hosiery dyers with hints on how the various knitted fabrics and hose must be treated in the dyehouse. A brief reference to the various textile materials used for the production of hosiery fabrics and hose at the present day is given. Further the most important points that must be considered in practical finishing in hosiery dyeing are described and the most important textile auxiliaries and dyes that are used are discussed. Hosiery dyeing machines which work very successfully are mentioned. In view of the increasing importance that the polyamide fibers Perlon and nylon have lately attained in the hosiery trade, brief hints are given on how to treat them in the dyehouse.

Dyeing of cellulose with direct dyes. R. H. Peters. *Hexagon Dig.* 3-9 (Nov. 1949).

Discusses properties which a dyestuff molecule should possess in order to be substantive to cellulose fibers—possession of potential hydrogen bond forming groups, and a linear and planar structure. The attachment of the dyestuff molecule to the cellulose molecule by the forming of hydrogen bonds is described, and the effect of the addition of electrolytes on dyestuff absorption is explained. Quantitative theories of dye absorption are outlined with reference to dependence on nature of cellulose fibers, and the dependence of dye affinity in presence of electrolyte on basicity of dyestuff is discussed. Diagrams and tables.
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Dyeing properties of Terylene. Anon. *Skinner's Silk & Rayon Rec. 24,* 1095, 1096, 1098 (Aug. 1950).

Progress made in the dyeing of Terylene is reviewed on the basis of a number of British patents on the subject.

Dyeing wool stock, tops, and yarn, Part III—IV.

Robt. W. Joerger. *Textile Industries 114*, 97-100 (July 1950); 125-6, 129 (Aug. 1950).

Chromium is applied as a mordant to wool either before, after, or during the dyeing process. These 3 methods are generally referred to as bottom chrome, top chrome, and metachrome or chlomate processes. Discussions of the 3 processes are presented, and acid dyes containing chromium are described. For Parts 1-2 see TTD: *7*, 652.

Dyeing wool with Indigosols by a new shortened method. Durand & Huguenin A. G. *Textil-Rundschau 5*, 141-44 (Apr. 1950); *in German.*

Describes method of dyeing wool with Indigosols at a temperature not exceeding 85°C for 30 min. in the presence of an anion-active auxiliary agent. Five to 15 g anhydrous sodium sulfate is added after the first 5 min. and 10-30 g are added after the second 5 min. and again after the third 5 min. period. The shade is developed in 15 min. with potassium bichromate-sulfuric acid at 85°C; rinsing, neutralizing and further rinsing follow. The method can be used for wool at any stage of the manufacturing processes.

Fast colors, why and how much? Virgil T. Hartquist. *Knitter 14*, 44, 46 (July 1950).

This discussion of fastness, with particular attention to vat colors, considers the problem from the standpoint of hosiery dyeing. The factors considered are: 1) the required fastness as determined by the life of the fabric and the method of washing; 2) the technical problems of dyeing influencing quality; and 3) how much more is the consumer and retailer willing to pay?

Felt dyeing and processing. B. Kramrisch. *Am. Dyestuff Reptr. 39*, 556-57 (Aug. 21, 1950).

Reprinted from *J. Soc. Dyers Colourists*, Jan. 1950. See TTD: *7*, 390.

Fiber properties in relation to knitwear dyeing. *Hos. Times 22*, 35-6, 56 (Nov. 1949).

Describes the development of dyes for acetate rayon—water insoluble dyes, soluble in cellulose acetate, and available in paste or solid form, and water-soluble dyes containing polar groups such as amino, hydroxyl, or carboxyl. Water-soluble dyes may be applied in a similar manner to direct dyeing of cotton, using a boiling dye bath and adding common salt or Glaubers salt: when water-insoluble dyes are used the temperature must be kept at 80-90°C to prevent agglomeration of the dye particles, and salt should not be added: a dispersing agent such as soap may be used. Boiling

liquor may cause delustering of the acetate, but this is reduced by tension or by addition of salt. In dyeing acetate rayon which has been previously delustered with titanium dioxide, more dye must be used to give the same depth of shade and dyeing to a deep shade may restore the luster.

Fiber properties in relation to knitwear dyeing. 17. Level dyeing with acid wool dyes. *Hos. Times 23*, 41-5 (May 1950).

Discusses the main features connected with the absorption of dyes by wool, with particular reference to the influence of pH and the importance of even distribution of acid over the wool. Difficulties and faults encountered in practice are discussed.
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Fibert properties in relation to knitwear dyeing. 18. Level dyeing of modified wool. *Hos. Times 23*, 41-4 (June 1950).

Discusses influence on dye absorption of chemical degradation of wool by alkalies, acids, oxidizing or reducing agents, and of degradation due to unequal weathering on the sheep's back. Theories of tippy dyeing are discussed.
HA

Improvement of levelling in wool dyeing. Alfred Carpenter. *Textile Recorder 68*, 73-4 (Aug. 1950).

A practical dyer describes his experiences in the application of new techniques of dyeing that originated in the laboratory.

Machine for treating textile goods with dyes and other liquids. Guy S. Helliwell & John L. Swindall (to Mellor Bromley & Co., Ltd.). Can. P. 463 881, Mar. 21, 1950.

Apparatus for treating textile goods with liquid comprising in combination, a tank in which the goods are contained for treatment, a perforated bottom plate within and spaced from the bottom of the tank and constituting a false bottom affording a bottom space therebeneath, at least one partition extending upwards from the bottom plate and dividing the tank into separate compartments, perforated closure plates on opposite sides of the partition constituting lids for the compartments, means adjustably mounted on the machine co-acting with the lids to hold the latter down, a propeller tunnel located in the bottom space directly beneath the partition, the tunnel dividing the bottom space into separate sections corresponding with the compartments, lateral openings in opposite sides of the tunnel, a propeller shaft mounted

within the tunnel, propellers on the shaft disposed adjacent to the lateral openings, and means for driving the propeller shaft.

Method of dyeing. Karl Heymann (to Am. Viscose Corp.). Can. P. 463 392, Feb. 28, 1950.

In a method of dyeing yarns or other shaped articles of vinyl polymers by the use of an aqueous dispersion of a suspension dyestuff, the step of assisting the dyeing by the presence of a water-insoluble organic compound which has a solubility in the vinyl polymer of at least 2% and is solid under the conditions at which the dyeing is carried out.

Method of dyeing. Thos. Skeuse, Jr. (to Geigy Co., Inc.). Can. P. 464 326, Apr. 11, 1950.

The method of dyeing synthetic linear polyamide fibers, which comprises boiling the fibers in an acid bath containing a chrome color, immersing the fiber in an acid bath containing a soluble chromium salt in the concentration of about ½% by volume, and then steaming the fiber at a super-atmospheric pressure of at least approximately 8 pounds.

Nylon cotton dyeing. *Hos. Und. Rev. 32,* 176 (Oct. 1949).

Notes on vat dyeing nylon hose having cotton reinforcements, with reference to duPont process: another chemical (not named) is added to aid distribution of the dye. Wash fastness is reported to be good. The process may be applied to dyeing of nylon hose reinforced with rayon.
HA

Nylon hosiery dyeing. *Hos. Und. Rev. 32,* 151-55 (Dec. 1949).

Notes on hosiery dyeing developments including use of vat-colors for nylon socks and research on dye-resist nylon yarn for identification stripes, seams, novelty heels, etc. in women's hosiery.
HA

The polarized fluorescence from dyed fibers. J. M. Preston and Y. F. Su. J. of *Soc. of Dyers and Col. 66,* 357-61 (July 1950).

Studies have been made of the relation between the degree of orientation of dyed regenerated cellulose fibers and the degree of polarization of their fluorescence under various conditions. It is shown that, with certain precautions, the fluorescence method gives a measure of the dichroism of the dyed fibres and is a simple and accurate method of evaluating dichroism.

Package dyeing at Bates. Anon. *Am. Wool Cotton Reptr. 64,* 19 (Aug. 24, 1950).

A brief description of the modernization of Bates Division's dyehouse is given. Yarn is now dyed in drum package dyeing machines, and manual handling of packages is no longer necessary.

Pad dyeing. Norman S. Cassel & Alfred T. Clifford (to Interchemical Corp.). USP 2 515 170, July 18, 1950.

The method of evenly pigment-dyeing a fabric without migration and flocculation of the pigment on drying, which comprises applying to the fabric a dispersion of a water-insoluble pigment in an aqueous solution of a water-soluble thermosetting resin, a water-soluble heat-precipitable alkyl cellulose, and a hydrophilic substance selected from the group consisting of water-soluble nonheat-precipitable cellulose ethers and mannogalactan flours containing a major proportion of mannogalactan, the proportion of the thermosetting resin being between 0.5 and 10% by weight based on total dispersion composition, that of the heat-precipitable alkyl cellulose between 0.02 and 0.25% by weight based on total dispersion composition, and that of the hydrophilic substance between 0.25 and 3% by weight based on total dispersion composition, and thereafter heating the fabric to dry it and to insolubilize the resin.

Progress in dyeing nylon goods. Anon. *Skinner's Silk & Rayon Rec. 24,* 1098, 1101-02 (Aug. 1950).

Progress in extending the range of suitable acid wool dyestuffs for use in dyeing nylon goods is reviewed. This paper is based on several papers that have appeared in the literature within the recent past.

Rapid dyeing. W. Seidenfaden. *Textile J. Australia 25,* 610-12, 655 (Sept. 20, 1949); *in English. Textil-Praxis 4,* 185-87 (Apr. 1949); *in German.*

Discusses dyeing with "Rapid Fast Dyestuffs" and gives details of methods used.

Some problems of rayon dyeing. V-VI. A. G. Tyler. *Brit. Rayon & Silk J. 27,* 58-9 (June 1950); 66-7 (July 1950).

Part V—Discusses the dyeing rayon staple as loose stock or as sliver. Part VI—The dyeing of cuprammonium rayon is discussed.

Staple rayon hank dyeing. Franz Zons. *Kunstseide und Zellwolle 28,* 121-24 (1950); *in German.*

This is a discussion of the package dyeing of staple

rayon with different dyes under various conditions.

Stripping color from textiles. Irving Teplitz. *Textile Bull. 76,* 68, 70, 72 (Aug. 1950).

This is a practical discussion of the removal of dyestuffs from textiles.

Stripping of dyeings. Kurt Fisher. *Textile J. Australia 25,* 258, 280 (May 20, 1950); *in English. Melliand Textilber. 30,* 599-600 (Dec. 1949); *in German.*

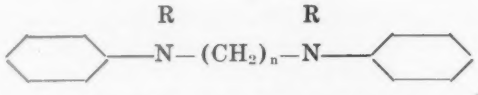
Describes in detail methods of stripping dyeings. Formulas are given for various stripping baths.

Use of vegetable mucilages in screen and hand block printing. Anon. *Am. Dyestuff Reptr. 39,* 558 (Aug. 21, 1950).

Reprinted from *Textile Recorder,* May 1950. See TTD: *7,* 571.

Water-dispersible pastes of gas fume fading inhibitors for acetate silk dyes. Francis H. Smith (to E. I. duPont de Nemours & Co.). USP 2 518 393, Aug. 8, 1950.

A stable, aqueous emulsion paste of an anti-fume agent of the formula:



wherein *n* is an integer of from 2 to 6 inclusive, R is a substituent of the group consisting of a hydrogen atom, a methyl radical, an ethyl radical, and a hydroxy-ethyl radical, containing from 30% to 50% of the anti-fume agent, from 1% to 5% of polyvinyl alcohol having a saponification number of from 40 to 180 and a viscosity as a 4% aqueous solution at 20°C of from 10 to 40 centipoises, and from 2% to 15% of an organic liquid which may be used as a plasticizer in preparation of resin products, and wherein the anti-fume agent particles are of such a size that not more than 10% will be retained in a 150 mesh sieve when a sample of the paste is filtered from a dilute aqueous suspension.

Yarn color testing. *Wool Rec. 76,* 1097-99 (Oct. 13, 1949).

Discusses discrepancies which arise in routine examination of yarn shade, owing to a number of variables such as temperature and time of washing and drying samples, type of soap used, and the human element. A method which helps to

eliminate these variables is outlined.
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SPECIAL FINISHING F

Application of moth-resistant treatments to fabrics used by the defense services of Canada. C. H. Bayley. *Can. Textile J. 68,* 45-9 (Aug. 4, 1950).

This is a report on work done by the National Research Council (Canada) on the efficiency of mothproofing agents, chemicals, procedures for analyzing treated fabrics for content of mothproofer and methods of treatment of the fabric at the mill.

Aqueous dispersions and methods of preparing the same. Maurice R. Burnell and Wm. J. van Loo, Jr. (to Am. Cyanamid Co.). USP 2 519 348, Aug. 22, 1950.

An aqueous dispersion for imparting flame-resisting characteristics to fabrics of regenerated cellulose comprising antimony oxide, polyvinyl chloride, monoguanidine phosphate and urea.

Coated open-wash vinylidene chloride fabric. Wm. W. Jackson & Ralph E. Porzer (to Celanese Corp. of Am.). USP 2 519 474, Aug. 22, 1950.

A screening or glazing material of high-impact strength and resistant to deformation on exposure to elevated temperature, comprising a woven open-mesh fabric consisting of filaments of polymerized vinylidene chloride coated with a transparent film of an organic acid ester of cellulose, the film extending across and closing the interstices between the filaments of the fabric.

Coating compositions films, and process of making same. Donald E. Edgar & Hilmer E. Winberg (to E. I. duPont de Nemours & Co.). USP 2 507 699, May 16, 1950.

An upholstery material or the like is made by calendering a chlorosulfonated polymer of ethylene upon a base fabric.

Coating with polythene. *Brit. Plastics 23,* 56-9 (Sept. 1950).

Details are given of techniques which have been developed for the coating of paper and fabrics with polyethylene.

Colloidal resin treatment improves wool and cotton. Ralph M. Fischer. *Am. Wool Cotton Reptr. 64,* 15-16, 63 (Aug. 24, 1950).

A new method of applying melamine resins to wool for shrinkage control, which eliminates entirely the need for high temperatures, is described. The

process overcomes the danger of damaging wool and minimizes differences between various wool or between wool and viscose or cotton so far as ability to accept resin treatment is concerned. The treated wool has excellent tensile strength, resistance to sagging and stretching, and the natural resiliency is undiminished or improved.

Comparative rain resistance of various wool fabrics. Arnold M. Sookne, Francis W. Minor & Milton Harris. *Am. Dyestuff Reptr. 39*, 548-54 (Aug. 21, 1950).

Describes tests on 14 wool fabrics of widely different structural and physical properties which were tested in an artificial 3-in. per hr. rain. The resistance to penetration and absorption of water of the fabrics was determined, and in addition the effect of a water repellency treatment on these properties was investigated. It was found, without exception, that samples treated with water repellent absorbed less water and gave better rsistance to pentration in an artificial 3-in. per hr. rain than did the respective untreated fabrics. Those fabric properties which favor good resistance to penetration (high weight and thickness) unfortunately also favor the absorption of large quantities of water. It appears that the production of wool fabrics which perform well with respect to both penetration and absorption will require development of highly superior water repellents.

Composition for decorating textiles. Interchemical Corp. Indian P. 40 444 (through *J. Sci. Ind. Research India*).

Applying on a fabric composition comprising a pigmented dispersion and preferably a gel dispersion of a polyethylene in a volatile organic liquid and heating the fabric.

Dimensional stability in wool fabrics. Anon. *Can. Textile J. 67*, 62, 65 (Aug. 18, 1950).

Discusses wool fabric shrinkage, including relaxation and felting shrinkage, London shrinkage, making up problems, and shrink resist processes.

Dimensional stability of woolen and worsted fabric. Werner von Bergen & Claude S. Clutz. *Textile Research J. 20*, 580-91 (Aug. 1950).

Description of "relaxation" and "felting" shrinkage. Other topics include: preshrinking processer at the mill; tailoring; and change in moisture content.

Dyeing acetate rayon to leave viscose effects white. W. Muller. *Ciba Rev.*, No. 81, 2965-67 (Aug. 1950).

When cellulose acetate and viscose blends are dyed it is difficult to prevent the viscose from picking up some of the dye. To remove this dye 3 methods are used which involve treatment with 1) Ultrason W, 2) potassium permanganate-sulfuric acid and 3) hydrosulfite BLI Ciba-sodium hypochlorite. A table is presented which indicates dyes recommended for viscose rayon reserves, the degree of staining by ach dye, which of the 3 methods of clearing the whites are effective in each case and any slight loss in depth, small change in shade or dulling caused by these treatments.

Fabric finish gains in importance. Anon. *Am. Wool Cotton Reptr. 64*, 59, 61 (Aug. 24, 1950).

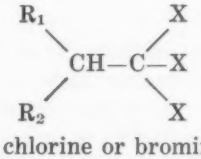
The increase in the number of different effects and textures that can be produced on fabrics is discussed. Of particuar interest is surface patterns that are produced by pressing to give pressed effects of somewhat permanent nature.

Flameproofing process. Fine Spinners and Doublers Ltd. & Bleachers' Assn. Ltd. Brit. P. 627 107, July 28, 1949.

Flameproof fabric permeable to air, and therefore suitable for protective clothing, etc. Zinc boro-compound is precipitated on the yarn, yarn is dried and impregnated with an emulsion of polyvinyl chloride plasticized with an organic phosphate, dried again and subjected to heat to form a polyvinyl chloride film on the yarn, and then woven into cloth.

Insectproofing. The Geigy Co. Australian P. 137 621, July 6, 1950.

An insecticidal composition comprises a compound of the formula



where x means chlorine or bromine and in which R_1 and R_2 are the same or different phenyl or substituted radicals at least one of which contains fluorine as a nuclear substituent, and a carrier therefor. The carrier may be an organic solvent, an inert powder, or an aqueous medium, and the composition may be in the form of a stain, paint, varnish, plaster or dry cleaning solvent. Also described and claimed is the process of protecting various materials (such as textiles, paper products, leather-cloth, linoleum or furniture filling) by incorporating the active compound therein.

Manufacture and application of new textile treatment agents. Wm. Baird, Thos. Barr, Arthur

Lowe & Jack Oliver (to Imperial Chemical Industries, Ltd.). USP 2 518 444, Aug. 15, 1950.

Textile materials of wool, regenerated cellulose or of cellulose esters or ethers having improved resistance to shrinkage and improved water-repellency are obtained by treatment with tristerin-11:11′:11″-triol tris-methylolcarbamate.

Mechanical finishing of textile materials. Louis A. Lantz & Jack S. Ingham (to Calico Printers' Assn., Ltd.). Can. P. 464 298, Apr. 11, 1950.

The process of rendering mechanically produced effects on textile materials other than cellulose esters permanent to washing by subjecting such materials to the desired mechanical treatment so as to produce a result more accentuated than the one ultimately desired, impregnating the textile materials with an aqueous solution of a precondensate of chemicals which on drying and heating are converted to an insoluble resin, and subjecting the impregnated materials to a short simple drying and heating treatment to carry the formation of the resin to the insoluble stage.

Method of rendering regenerated cellulose water-repellent. Mamerto M. Cruz, Jr. (to Am. Viscose Corp.). USP 2 519 232, Aug. 15, 1950.

Regenerated cellulose fibers, yarns and fabrics are rendered water-repellent by treatment with a solution of an organo-silicon halide in a water-immiscible organic solvent therefor for 10 to 15 min. at a temperature between 0° and 10°C.

Method of treating wool and fabrics formed therefrom to increase their resistance to decomposition by heat. Chas. R. Barnes (to Albany Felt Co.). USP 2 515 181, July 18, 1950.

A fabric formed substantially of wool fibers and characterized by its resistance to decomposition when subjected to temperatures up to about 300°F; the fabric having a complex, metallothiocyanate chemically combined with the fibers but being otherwise substantially free of other metallic compounds.

Mothproofing. Robt. Zinkernagel. *Textil-Rundschau 4,* 169-182 (May 1949); *in German.*

The habits of the insects that attack wool are described. A history of the development of protective agents is given, and methods used for their evaluation are described.

Mothproofing, review. A. D. J. Meeuse. *De Tex 9,* 456-72 (June 1950); *in Dutch.*

Review of development of mothproofing treatments, with tables showing constitution, properties, and uses of the principal compounds used. HA

Organdie finishes: their importance. R. G. Manudhane. *Indian Textile J. 60,* 631-35 (May 1950).

Brief descriptions of the work of Mercer and the Swiss Heberlein firm on organdie and similar finishes are given. Exact methods, including concentration of sulfuric acid, temperature and time of treatments for producing desired finishes are provided.

Permanently flameproof cloth. Anon. *Am. Wool Cotton Reptr. 64,* 11 (Aug. 31, 1950).

Cloth treated with Permaproof 300, a compound which will not wash out, is reported to be flameproof, shrink resistant, and mildewproof. The cloth is said to retain much of its softness and porosity and is not tacky.

Polyvinyl acetate emulsions in textile processing. John Trevor. *Textile Recorder 68,* 77 (Aug. 1950).

Increasing interest is now being taken in the use of polyvinyl acetate dispersions to enhance the quality, handle and appearance of many kinds of fabrics, particularly printed cotton goods. Experience has shown that these dispersions deposit colorless, clear films which do not alter the color values of dyes and printed goods. They offer the advantage of easy application by any of the standard methods of finishing textiles, such as padding, tumbling and roller coating for low viscosity dispersions and doctor knife and certain types of roller applications for dispersions of higher viscosities. As the copolymer present in processing solutions is fully pre-cured there is no need to make use of any baking, simple drying being quite adequate. Drying methods, such as festoon, tenter frame, etc., are readily applicable to treated fabrics and do not injure the resin finish; the resin film is deposited on the fibers by ordinary evaporation of the water constituent of the emulsion. As the copolymer is used as a simple dispersion in water no complications arise from the presence of solvents or filters; the dispersions are fully compatible with starches, gums, dextrines, waxes and plasticizers, etc., and completely miscible with water.

Preservative compositions for cellulosic materials. Jas. F. McCarthy (to Treesdale Laboratories, Inc.). USP 2 518 241, Aug. 8, 1950.

A colorless composition for fireproofing and waterproofing textiles containing chlorinated paraffins,

a phenol formaldehyde resin in the fusible stage, finely divided calcium carbonate, antimony oxide and aluminum stearate.

Process for rendering materials water-repellent and compositions therefor. John R. Elliott & Robt. H. Krieble (to Gen. Electric Co.). USP 2 507 200, May 9, 1950.

Silicone compounds, such as the sodium or copper salts of dimethylsilanediol are applied to paper, textiles or other collulosic materials for the purpose of rendering them water-repellent, mildew resistant, and softened.

Process for imparting hydrophobic properties to cellulose fibers. Franz E. Hubert, Erwin Heisenberg, Adolph Steindorff & Ludwig Orthner (to Chemical Developments of Canada, Ltd.). Can. P. 464 024, Mar. 28, 1950.

The process of imparting hydrophobic properties to cellulose fibers by impregnating the fibers in a bath which contains an N-methylol compound of an acid amide of a monocarboxylic acid and ammonia having at least one radical with at least 4 C atoms selected from the group consisting of aliphatic and cyloaliphatic radicals, and an agent of acid action such as a feeble acid, and heating them after the impregnation.

Production of thermosetting aldehyde reaction products. Welcome I. Weaver (to Libbey-Owens-Ford Glass Co.). USP 2 518 963, Aug. 15, 1950.

A synthetic resin useful for molding compositions, creaseproofing textiles, etc., is obtained by reacting formaldehyde and N, N-ethylene urea in equimolecular proportions.

QMC treatment minimizes moth damage to woolens. *Am. Wool Cotton Reptr. 64,* 17-18 (Aug. 1950).

A new insecticide treatment by the Quartermaster Corps is expected to give more effective protection of Army woolen fabrics and uniforms against damage by moths and other insects. The method consists in treating woolen fabrics with a solution of one half of 1% DDT at the time materials are sponged and will protect from insect damage through an indefinite period of storage.

Quaternary ammonium textile treatment agents and method of application thereof. Wm. Baird, Thos. Barr & Arthur Lowe (to Imperial Chemical Industries Ltd.). USP 2 518 266, Aug. 8, 1950.

The shrink-resistance, water-repellence, and softness of various textile materials is improved by the application of certain new quaternary compounds.

Quaternary compounds and manufacture and use thereof as textile treating agents. Wm. Baird, Thos. Barr & Arthur Lowe (to Imperial Industries, Ltd.). USP 2 518 267, Aug. 8, 1950.

Certain new quaternary compounds are suggested for the improvement of the crease-resistance of textile materials.

Resins in fabric finishing. R. M. Fischer. *Brit. Rayon & Silk J. 27,* 60-1 (June 1950).

In this article the author surveys progress in the Urea formaldehyde and later the melamine resins, application of synthetic resins in fabric finishing. followed by other types including thermoplastics, have vastly widened the scope of fabric finishing for the attainment of desirable characteristics and some of the problems and possibilities of these modern finishing agents are mentioned.

Resin treated parachute webbing. Anon. *Am. Wool Cotton Reptr. 64,* 33-4 (Aug. 24, 1950).

A process of resin-treating the ribbon-like strands of nylon webbing used in parachute harness will triple the life of the harness and prevent fraying. The process consists of pressing the resin, polyvinyl-butyral (Merlon-BR) into the webbing using a Butterworth padder. The resin does not penetrate the fibers, but acts more like an adhesive to keep the fibers from becoming separated.

Textile auxiliaries; chemical industry's aids to advance. Anon. *Fibres 11,* 271-72 (Aug. 1950).

The concluding article in this series discusses metal sequestering auxiliaries, the various uses to which textile auxiliaries can be put and their future developments. See TTD: *7,* for previous parts.

Textile material and process of preparing them. Josef Nuesslein, Georg von Finck & Hermann Stark (to Chemical Developments of Canada, Ltd.). Can. P. 464 021, Mar. 28, 1950.

Waterprofed textile material impregnated with stearoxymethylpyridinium chloride and with a mixed polymerizate from maleic anhydride and octadecylvinylether and heated at an elevated temperature after the impregnation.

Titanium compounds for waterproofing. R. W. Moncrieff. *Textile Mfr. 76,* 394-95 (Aug. 1950. Treatments of fabrics, etc., with certain ti-

tanium compounds offers interesting possibilities for the manufacture of waterproof garments in cotton, wool or rayon, and for such other uses as sails, tents, awnings, water-oil selective filter cloths, spotproof felts, etc. The present discussion is based on an article by D. R. Carmody in *Ind. Eng. Chem. 42,* 251-53 (Feb. 1950); see TTD: *7,* 229.

Treatment of cellulose. Howard M. Buckwalter and Philip D. Montgomery (to U. S. Rubber Co.) USP 2 521 446, Sept. 5, 1950.

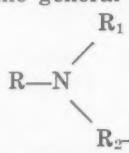
The method of improving the resistance of cellulose fibers to the deteriorating effects of heat aging which comprises incorporation guanazole in the cellulose fiber in amount of at least 0.25% by weight.

Treatment of felts for paper making machinery and the like. Orion W. Berglund (to The Orr Felt & Blanket Co.). Can P. 464 339, Apr. 11, 1950.

A method of increasing the service life of paper making felts, characterized by the step of impregnating the felts with a liquid silicome resin.

Treatment of fibrous materials. Heinrich Ulrich, Karlhugo Kuespert & Jens Satler (to Chemical Developments of Canada Ltd.). Can. P. 464 014, Mar. 28, 1950.

The process of improving fibrous material which comprises treating the fibrous material with a compound selected from the class consisting of amines of the general formula:



their salts and their quaternary ammonium compounds in which formula R represents an aliphatic hydrocarbon radical containing at least 8 C atoms, R_1 a radical selected from the class consisting of aliphatic, cycloaliphatic, aromatic and mixed aliphaticaromatic radicals and R_2 an aliphatic radical.

Treatment of material composed partly or wholly of wool or similar fibers. Peter Alexander. Can. P. 463 461, Feb. 28, 1950.

A process for the treatment of wool for the purpose of rendering it substantially unshrinkable which comprises exposing the wool to action of vibrations of a frequency of between 3 kilocycles per second and 3,000 kilocycles per second, the vibrations having an intensity at least suficient

to coagulate a 0.1% solution of egg albumen at the iso-electric point and at a temperature below 50°F in a period of less than 5 min. while immersed in an aqueous liquid which is chemically inert to wool.

Water-repellent textile material and process of preparing them. Gerhard Balle, Ludwig Orthner & Johann Rosenbach (to Chemical Developments of Canada Ltd.). Can. P 464 025, Mar. 28, 1950.

Water-repellent textile material obtained by impregnating a textile material with the product of the formula

$$C_{18}H_{37}.O.CH_2O.CO.CH_2.C_1N.(CH_3)_3$$

Wool shrinkage reduction. Wolsey Ltd. Brit. P. 629 329, Sept. 16, 1949.

Shrink-resistant treatment by formation on wool surface of a solid deposit of a polymer produced by hydrolysis of a mixture of a silane (e. g. diethyl dichlorosilane) and silicon tetrachloride.

TESTING AND MEASUREMENT G

Action of light on textiles. R. Dicker. *Rayonne 6,* 85, 87, 89, 90 (Aug. 1950); *in French.*

An investigation of the action of light on bright viscose rayon, cotton, silk and dull nylon which had been dyed with vat dyes at 0 and 100% R.H. Tabular data indicates the loss of strength of each of the fibers according to the dye used. It has been determined that at 100% R. H., the anthraquinone dyes are particularly active on silk and nylon but less so on viscose and cotton. At 0% R. H. the effect on viscose, silk and cotton is much less than on nylon.

Analysis of resin textile finishes. W. Ernst & M. Sorkin. *Textile-Rundschau 4,* 237-47 (July 1949); *in German.*

The amount of resins present on textile fibers can be estimated by dyeing. If 9% resin is present on urea-treated fibers they will be dyed weakly by Calco Fast Blue SL; at resin content of 12-15% the fibers are dyed very strongly. Other dyes and dye mixtures can be used to differentiate types of resins or to estimate the approximate amounts present. Fibers treated with formaldehyde condensation resins can be analyzed for formaldehyde with Tollens reagent or by the reaction of formaldehyde solution with alkaline silver diamine solution. Melamine resins are analyzed colorimetrically by the addition of sodium hypochlorite. Urea interferes with this melamine

determination. Urea-containing resins can be analyzed by decomposing the urea to nitrogen and then measuring the nitrogen gas. A procedure of analysis for formaldehyde resin finishes is given.

Angle of torsion at break as a criterion for the evaluation of fibers. Paul-August Koch. *Textil-Rundschau 4,* 199-211 (June 1949); *in German.*

A method for the measurement of the angle of torsion of a fiber at the point of rupture is developed. The angle is independent of the diameter of the fiber; it is a measure of the transversal resistance of the fiber. The conditions of the test are discussed and its value is supported by the results of various comparative tests.

Bulk flexural rigidity of jute and its relation to spinning quality. B. K. Chakrabarti. *Indian Textile J. 60,* 724-34; 738 (June 1950).

A complete mathematical treatment of the relationship between bulk flexural rigidity of jute and its spinning quality is presented. The apparatus for determining flexural rigidity is described as is the underlying theory.

Chemical testing. M. Lipson. *Textile J. Australia 25,* 428-30 (July 1950).

Chemical tests on detergents for wetting, emulsifying and suspending power are described. Determination of pH of wool before and after scouring, determination of wax content, residual soap, combing aids and identification of fibers are also discussed.

Detection of melamine and urea resins in technical products. G. Widmer. *Textil-Rundschau 4,* 279-88 (Aug. 1950); *in German.*

Describes a method for the preparation of specific crystalline derivaties of melamine and urea for use in the differentiation of their resins in technical products. Two tests are carried out on the sample: 1) detection of melamine resin by hydrolysis with strong acetic acid or hydrochloric acid, sublimation of the dry residue, and identification of the melamine crystals or melamine picrate crystals; and 2) detection of urea resin by hydrolysis with weak acid, precipitation with xanthydrol, and identification of urea as urea dixanthate. Ilustrated with numerous photographs of melamine, and melamine picrate, and urea dixanthate crystals.

Laboratory aid in wool scouring. E. A. Leonard. *Am. Wool Cotton Reptr. 64,* 23-4, 65 (Aug. 24, 1950).

The laboratory testing of materials and process variables in continuous wool scouring to indicate large scale performance and for obtaining information on cost and quality control is discussed. The design of appropriate tests and interpretation of their results are also discussed.

Measurement of efficiency of detergents. Gilbert Manoc & J. P. Sisley. *Teintex 15,* 125-39 (1950).

Reviews recent developments in methods of evaluating detergents. Methods of soiling and washing fabric samples are discussed. A new French laboratory washing machine, called the "Lavatomic", is described briefly and results obtained with it in evaluating certain detergents are present.

New cloth measuring machine. Anon. *Textile Mercury & Argus 103,* 260 (Aug. 18, 1950).

Measuring and re-rolling 60 yards of woolen fabrics by means of the Balaban machine requires less than 5 minutes, as compared with 45 minutes by manual methods.

Non-destructive mechanical test for animal fibers. Harris M. Burte. *J. Applied Physics 21,* 494-99 (June 1950).

Describes investigations made of the conditions under which the slope of the force-extension curve in the Hooke's law region may, for animal fibers, be non-destructively measured. It was found that a single fiber can be used to investigate a chemical reaction by measuring the change of Hookean slope with the time of reaction. The usefulness of the technique is illustrated by its application to the heterogeneous reaction between wool and concentrated neutral salt solutions. The heterogeneous reaction between wool and aqueous glycerine solutions was also studied. Other mechano-chemical methods, as well as swelling experiments, are described, and were found to give results consistent with those for the Hookean slope technique.

Physico-chemical measurements of cotton and linen fabrics. K. Huber. *Textil-Rundschau 4,* 310-28 (Sept. 1949); 431-42 (Dec. 1949); *in German.*

Results of a rather extensive physicochemical investigation of cotton and linen fabrics are presented. The following aspects were studied; viscosity measurements on chemically treated cotton and linen fibers (structure and properties of cotton and linen fibers; solution of cellulose and native celluloses in Schweizer reagent, copper viscosity and fluidity number, determination of aver-

age degree of polymerization); mechanical testing of cotton and linen fabrics (determination of tensile strength, evaluation of quality of fabrics); combination of viscometric and tensile strength measurements on cotton and linen fabrics. 52 references.

Present position of the determination of light fastness. Paul Rabe. *Textile J. Australia 25,* 224, 226-27 (May 20, 1950); *in English. Melliand Textilber. 30,* 470-72 (Oct. 1949); *in German.*

Efforts have often been made to apply physical methods to determine the degree of the action of sunlight on dyeings. Comparison with a standardized scale is the best method and one that can be carried out by every mill man without difficulty. It consists of a selected blue dyestuff on wool, of the nature of an actinometer, such as is now universally used in Germany, England and Switzerland, while attempts are recently being made in the USA and Russia to work with scales consisting of dyestuffs produced by graduated mixtures of a dyestuff fast to light with one that is loose to light.

Tables for use in computing small color differences. Dorothy Nickerson. *Am. Dyestuff Reptr. 39,* 541-46 (Aug. 21, 1950).

A set of tables for conversion of I. C. I. tristimulus values (X, Y, Z) to the corresponding Munsell color value functions are given. Two formulas are discussed by which the Munsell functions can be used to compute an index number for small color differences. The method can be applied to spectrophotometric data. Once the tristimulus values are found the further computations are rapid and simple.

Testing for damage. M. V. Glynn. *Textile J. Australia 25,* 442-44 (July 1950).

Staining techniques are described for determining damage in woolens. These techniques are applicable for determining both physical (processing) and chemical (changes caused by sheep's metabolism) damage.

Testing single fibers. A. J. Farnworth. *Textile J. Australia 25,* 424-27 (July 1950).

Various instruments for measuring frictional properties of single woolen fibers for process control are described. Examples of the importance of the load-elongation curve of a fiber as affected by bleaching and scouring agents are also cited.

Testing the raw material. W. R. Long. *Textile J. Australia 25,* 421-24 (July 1950).

In the testing of raw wool 2 criteria are established as being of utmost importance. The first is the variability of the raw material, and the second the need for rapidity in handling and evaluating large quantities of wool. A number of tests are described for properly assessing the value of wool. These include determinations of the following: 1) moisture content; 2) yield (per cent of wool, water, wax, suint and dirt) and 3) fiber length (3 methods).

Tests in dyeing and finishing. M. Lipson. *Textile J. Australia 25,* 439-40 (July 1950).

Testing of dye strength, efficacy of wetting agents, rate of dyebath exhaustion, determination of pH of fabric, resistance to fading and perspiration and determination of water repellency characteristics are all discussed.

Textile chemistry and physiology. Otto Mecheels. *Textil-Rundschau 4,* 271-79 (Aug. 1949); *in German.*

Discusses the contribution of the textile chemist to the physiology of clothing. An illustrated discussion is given of methods for determining heat retention and air retention capacity and permeability. The effect of textile finishing processes on the physiological characteristics of fabrics is considered.

Yarn irregularity testing. N. A. Whiffen. *Textile J. Australia 25,* 430-31 (July 1950).

Factors such as strength, twist, number of fibers in a cross-section, count and yarn diameter, which are associated with irregularity of yarns are discussed. Several methods for measuring irregularity are also discussed.

Yarn strength testing. A. Gray. *Textile J. Australia 25,* 431-33 (July 1950).

Three different methods—single strand, serigraph and skein—of testing yarns are discussed. The advantages and disadvantages of each of these is cited. Finally a description of the various instruments used to carry out the above tests is given.

What good is a cotton fiber testing laboratory? Nick Keffeler. *Textile Bull. 76,* 50, 52, 54 (Aug. 1950).

The laboratory tests that have been developed for testing cotton fibers as compared with the skill of the classer in evaluating the same properties. The author's thesis is that the laboratory tests are too time-consuming to be of practical value to a mill and that the work of most fiber testing

laboratories is simply a repetition of tests developed by the federal government. He deplores the fact that nothing original is emanating from the many laboratories of mills and cotton merchants. The laboratory tests are considered a great help and a guide to a classer insofar as getting an overall picture of the character in cotton throughout the belt is concerned.

Clothing and fabrics G 1

Abrasion testing machine. Robt. L. Fish. USP 2 519, 556, Aug. 22, 1950.

A device for testing fabrics for resistance to abrasion.

Crease resistance testing. Ladislav Boor & Linton A. Fluck (to Am. Cyanamid Co.). Can. P. 464 287, Apr. 11, 1950.

A method of determining the crease resistance of a sheet which includes the steps of folding a sheet upon itself and over a supporting edge, applying a predetermined pressure to the fold for a predetermined time, removing the pressure and measuring the angle between the legs of the folded sheet.

Laundering's effect on sheeting. Anon. *Am. Wool Cotton Reptr. 64*, 11-12 (Sept. 14, 1950).

In a study of the strength of fabric made by the U. S. Department of Agriculture, on warp and filling after washings up to 75 treatments, it is shown that all cotton or all rayon sheeting fabrics are stronger than any blends of the 2 fibers. Preparation of the sheeting for the tests and some of the results obtained are discussed.

Testing fabrics for strength. E. J. Schefferle. *Textile J. Australia 25*, 433-35 (July 1950).

Three aims in fabric testing are cited. These include quality control, conformance to specifications, and to obtain a quantitative measure of future working properties of the fabric. A description is given of a pendulum tester, burst tester and a constant rate of load machine. In each instance the factors which influence the test results are considered.

Textile flexing and abrasion tester. Robt. C. Cross & Walter Krauss (to Sears, Roebuck & Co.). USP 2 519 551, Aug. 22, 1950.

An apparatus for testing fabrics for resistance to wear by flexing and abrasion.

Wear testing. D. L. C. Jackson. *Textile J. Australia 25*, 435-38 (July 1950).

The main factors which constitute wear are discussed. These include plane, edge and flex abrasion, tearing, snagging and impact forces. The various testers in common use such as the Martindale abrasion machine, T.B.L. "Ring-wear" tester, Wyzenbeek Precision wear test meter, Schiefer and Stall abrasion testers are also discussed. The importance of the abrading surface, direction and type of motion and the determination of the end-point of a test are stressed.

Instruments and instrumentation G 2

Apparatus for gaging textiles, particularly yarns and sliver. Oskar Grob & Hans Locher (to Zellwegger A. G. Apparate-und Maschinenfabriken Uster). USP 2 516 768, July 25, 1950.

In a high frequency oscillator measuring device for determining the substance cross-section variations of textile materials, especially of yarn, roving and sliver, a measuring condenser, comprising 2 combed-shaped electrodes having teeth, the teeth of one electrode being offset and the electrodes being assembled so that the offset teeth of one electrode lie between the teeth of the other electrode, and so that between each tooth of one electrode and the adjacent tooth of the other electrode a measuring field is produced through which the material undergoing test is to be drawn, the width of the thus formed measuring fields being so chosen that the substance of the material undergoing test fills 2 to 20% of the measuring field utilized.

Control instruments in the processing of textiles. I-VI. Leo Walter. *Textile Mercury 122*, 1047-48, 1050, 1052, 1055 (June 30, 1950); 123, 17, 19, 28 (July 7, 1950); 57-8 61-2, 65 (July 14, 1950); 107, 109, 111-12 (July 21, 1950); 137-38, 140-42 (July 28, 1950); 221-23, 224-25, 227, 229 (Aug. 11, 1950).

This series is devoted to a discussion of some of the control problems the textile engineer is frequently called upon to solve, and the facilities which modern scientific methods have put at the textile industry's disposal for producing better quality goods at lower cost. The topics covered in the first 6 parts of the series are: 1—Survey of manufacturing processes and their control requirements and characteristics; 2—characteristics of heat flow process; 3—mechanisms and functions of controllers; 4—practical applications of automatic control; 5—modern methods of dye control; and 6—thermostatic control of warm air in processing.

Control instruments in the processing of textiles —VII. Leo Walter. *Textile Mercury & Argus 123*, 294, 297-98, 300, 302 (Aug. 25, 1950).

This final article of the series is devoted to a discussion of steam pressure controllers, liquid level control, automatic speed control, control of humidity, and time cycle control.

Determination of roving irregularities. Anon. *Textile Recorder 68*, 91-2 (Aug. 1950).

The W.I.R.A. roving levelness tester measures indirectly the weight per unit length of the roving by compressing it into a rectangle of constant width and measuring the height of the rectangle. This principle is not new, but the W.I.R.A. instrument has a wider range of usefulness than older instruments of the same type; it can be used for all worsted material from the thickest top to the finest roving, and in many cases, though with more moderate accuracy, for woolen slubbing and woolen yarns. It has also been tried successfully on cotton, synthetic fiber and flax slivers. The roving is passed through a rectangular groove in the periphery of a revolving roller and a second roller rests with considerable pressure on the roving. The lower roller is positively driven, and as the roving passes between the 2 rollers, the rise and fall of the upper one due to the irregularity of the roving is amplified and transmitted by means of a lever system to the pen drawing the trace on the chart.

Microscope in textile research. Mary E. Carter & Edw. Abrams. *Southern Research Institute Bull. 3*, 11-14 (Spring 1950).

This is a non-technical discussion of the microscope and its application to the study of textile problems.

Moisture content of cloth. Anon. *Textile Mercury and Argus 123*, 179 (Aug. 4, 1950).

Describes features of the new Fielden "Moistektor" for controlling the moisture content of short runs of fabric of widely differing weights. The principle of the device is based on the measurement of the capacitance of an insulated bar or tube which is placed across the process machine in a position where the yarn or fabric runs over it. When the material is dry there is practically no spread of the electrical field, but, as the moisture content of the material is increased, the electrical field spreads rapidly and changes the measured capacitance of the bar, this effect being virtually independent of the material's thickness. The electronic circuit continuously monitors the

capacitance of the electrode and any change is instantly indicated by illumination of the appropriate lamp. The instrument can be fitted with an automatic controller to stop and start a machine according to the degree of moisture registered by the device, or a controller can be fixed to slow down or speed up delivery automatically.

New measurement and control devices in electronics display. Anon. *Dyer 104*, 94-5 (July 28, 1950).

Brief notices are given of 2 new instruments of textile interest.

New tenacity testing apparatus for fabrics, paper, etc. Heinrich Sulzer. *Textil-Rundschau 4*, 49-53 (Feb. 1949); *in German.*

Describes a new testing apparatus which operates by puncturing the test sample with a hard, polished sphere. The elongations at break and tenacities observed for 19 different fabrics were similar to those obtained by the conventional strip-tension method of testing.

Pick indicator. John H. Wehrenberg. USP 2 517 515, Aug. 1, 1950.

A pick count indicator including a rigid supporting main structure comprising elongated side members connecting end members providing a rectangular open frame member, supports under the frame member for mounting it over a specimen of mesh construction, a frame including end members pivotally supported centrally thereof on the underside of the end members of the main frame so as to swing in a plane parallel and closely adjacent to the specimen, and uniformly spaced parallel filaments connected between the pivotally mounted end members.

Scouring with synthetic detergents. Anon. *Dyer 104*, 91-4, (July 28, 1950).

The problems associated with the use of synthetic detergents for scouring wool still do not seem to be completely solved. There are 3 groups concerned in this problem. They are the wool scourers, the sewage disposal authorities, and the manufacturers of synthetic detergents. The viewpoints of the 3 groups are discussed. In brief, viewpoints are as follows: 1(The wool scourer—"better results are obtained than with soap, and often at a lower cost." 2) The manufacturer—"problems of effluent disposal have been exaggerated." 3) The sewage engineer—"We are apprehensive."

Studying the loom in action. Anon. *Textile Week-*

ly 45, 1154 (May 5, 1950).

Describes features of the "Stroboloom", a specially constructed stroboscope for viewing the loom shuttle actually in motion. The flash tube gives an intense flash of white light of very short duration, exactly synchronized with each cycle of the mechanism under investigation, thus giving the visual effect of "freezing" the movement. The instrument is synchronized with the machine motion by a contactor fitted with a remote control so that the shuttle may be viewed, apparently stationary, at any desired position of the weft. The speed of the shuttle can be accurately determined by relating the shuttle position to stroboscopically determine angular settings of the driving shaft on the loom. For convenience of operation the phase control is combined with the lamp assembly.

Textile instruments XI—Instrument control of dyebaths. R. W. Moncrieff. *Fibres 11*, 207-11 (June 1950).

Several instruments used to control dyeing of fabrics and hosiery are described. See also TTD: *7*, 393 and 489.

Whitin bobbin tester. Anon. *Can. Textile J. 67*, 60 (Aug. 18, 1950).

See TTD: *7*, 585.

Yarn control in winding; Measurements of tension and package density. Anon. *Textile Mercury & Argus 103*, 259-60 (Aug. 18, 1950).

Measurement of yarn tension and package density at winding and warping operations are made possible by the new "Mercer" yarn tension meter and the "Mercer" package density meter. The meters are compact in size and will slip into the packet. Instrument cases are provided by the manufacturer, Universal Winding Co., Manchester (England).

Yarn evenness tester. Anon. *Textile Mercury & Argus 123*, 134, 158 (July 28, 1950).

Features of a new electronic instrument for measuring the irregularity of sliver, roving and yarn are described. The instrument, developed by Dr. P. H. Walker, Manchester College of Technology, measure the change in capacity caused by introducing material into the gap of a fixed air condenser, this change of capacity being, in certain conditions, proportional to the weight of material introduced. The capacity change is measured by using an AC capacity bridge of the form used in the Fielden electronic moisture meter, but modified to provide a high degree of stability and accuracy. A continuous record of the variations in weight per centimeter can be obtained by using a cathode ray oscillograph or pen recorder.

Yarn evenness testing. *Wool Rec. 76*, 1327-28 (Nov. 3, 1949).

Survey of latest methods of yarn and sliver irregularity testing, including W.I.R.A. sliver and roving levelness tester, B.C.I.R.A. photographic yarn regularity tester, N.P.L. pneumatic method, and electronic methods. Some details of the W.I.R.A. levelness tester are given.

HA

TEXTILE MILLS H

Aids to productions. Anon. *Fibres 11*, 239-42 (July 1950).

Several new pieces of equipment and several new chemicals are described. In the first category a new pin stenter, 3 improved models of smallwares looms, an automatic pirn winder and a discam-rotary switch are described. In the second category several shades of dyes and a product intended to impart anti-slip, proper lubrication and with complete scouring properties is cited.

All electric drive. R. R. Lang. *Am. Wool Cotton Reptr. 64*, 29-30 (Aug. 24, 1950).

The basic standard control of a d-c adjustable voltage drive is discussed, and a description is given of package units.

Causes of mildew on packaged yarn. Anon. *Textile Industries 114*, 157, 159 (July 1950).

In answer to a reader inquiry regarding causes of mildew on the bottom layer of packaged yarn stored in cases in a warehouse, suggestions are given as to the probable cause and remedy. Insufficient drying of the yarn prior to wrapping, and poor circulation of air beneath the stored cases are suggested as causes for the trouble.

Chatham Manufacturing. Anon. *Textile Age 14*, 22-5 (Aug. 1950).

The history of Chatham Mfg. Co., a large woolen mill, is reviewed.

Double draw bar press improves cloth baling operation. Anon. *Textile Industries 114*, 123 (Sept. 1950).

A double draw bar type baling press with an overhead power mechanism, used in combination with pallets on cloth trucks, reduces cloth baling expenses at Riegel Textile Corp. The new press has increased baling pressure which reduces the vol-

ume of cloth bales, allowing less space for storage of the bales.

Drying cylinders and kiers. Edw. Ingham. *Dyer 104*, 117, 119 (July 28, 1950).

Discusses the dangers of steam explosions due to valve faults or worn cover bolts. Fatal explosions have occurred with vessels operated at only 2 lb. per sq. in. pressure. Precautions to be observed are noted.

Electrical equipment can be cotton mill fire hazard. Swaffield Cowan. *Textile World 100*, 116-17, 184, 186 (Aug. 1950).

About 50% of fire damage claims from the mills in 3 states could be traced to the electrical equipment. Many more small fires caused by electrical equipment were not serious enough to file claims. Most of these fires were the result of using the wrong type of electrical equipment. Line accumulation is the major hazard. Many enclosures and boxes are not lintproof; but should be. Illustrated.

Electronics vital factor in textile production progress. Lewis T. Jester, Jr. *Am. Wool Cotton Reptr. 64*, 7-8, 23 (Sept. 14, 1950).

Through the use of electronic devices in the textile industry, speeds are increased, quality improved, work simplified, and labor and maintenance reduced. Electronically controlled loom detectors, letoff drives, tension devices; photoelectric cloth detwisters; high speed seam detectors; etc. are among the electronic devices discussed as examples of the application of electronics to the textile industry.

Jack positions beam at slasher. Anon. *Textile Industries 114*, 179, 181 (Sept. 1950).

A pneumatic jack installed at the front of the slasher to lift the empty loom beam from the floor into the chuck of the slasher (at Avondale Mills) saves time and eliminates manual labor required to lift the heavy beam. The working mechanism of the air lift is located beneath the floor with the life fitting almost flush with the floor when it is not in use.

Lab instrument bench avoids mill vibration. Anon. *Textile Industries 114*, 171 (Sept. 1950).

Construction details of a laboratory bench, on which delicate instruments are to be mounted, are given. The design makes sensitive equipment absolutely free of vibration.

Loom reconditioning program at Tallassee Mills. L. D. Sayers. *Textile Industries 114*, 149-56 (Sept. 1950).

A detailed description of facilities for reconditioning looms and the method by which overhauling is accomplished at Tallassee Mills is given.

Modern mill layout complements new machinery. Anon. *Am. Wool Cotton Reptr. 64*, 15-16, 50-1 (Sept. 7, 1950).

The planning and construction of a new mill and its machinery to obtain maximum production per man-hour, at minimum cost for materials, are discussed. A single story building, laid out so that a smooth, straightflow plan of material is gained, is recommended.

New machines in the textile industry. Latest advances. J. S. Barke. *Indian Textile J. 60*, 619-21 (May 1950).

Describes in detail an automatic feed device which delivers pirns from a hopper to the winder and the Balmes high-draft system.

New textile machine designs. Anon. *Am. Wool Cotton Reptr. 64*, 13-14 (Sept. 7, 1950).

A preview of some of the machines and devices to be displayed at the 16th Southern Textile Exposition in Greenville, S. C. is presented.

Personality and techniques important in time studies. Robt. T. Charlton, Jr. *Textile World 100*, 106-07 (Aug. 1950).

The value of the time study is dependent on the skill and integrity of the person recording the study and whether the operator is in a normal enough state of mind to perform his duties in the proper way. The right and wrong approach to the operator is given by explanation and a series of pictures.

Range drive standardization for textile finishing. R. R. Lang. *Am. Wool Cotton Reptr. 64*, 11-12 (Aug. 10, 1950).

The most popular type of electric drive used in textile finishing, the adjustable voltage d-c drive together with compensating gates for speed coordination, and the standardization of its component parts are described. Advantages resulting from the use of the same type of electrical drives on all ranges, including easier operation, simpler maintenance, smaller spare-parts stock, greater flexibility, etc., are also discussed.

Remodeled press hikes output. Anon. *Textile Industries 114*, 172, 174 (Sept. 1950).

The integration of an endless belt with a pressing machine has produced a "conveyorized" pressing machine with triple the capacity of the original machine at Keystone Mills.

Show week in Greenville. Anon. *Textile Industries 114*, 137-48 (Sept. 1950).

A directory of the exhibiting companies and their products to be displayed at the 16th Southern Textile Exposition in Greenville, S. C. is presented.

Sickness and recovery of a textile mill. III. Jas. Osborne. *Textile Age 14*, 64-7 (Aug. 1950).

A discussion of the thorough overhaul of drawing frame and the tightening up of operating discipline and supervision to determine the cause of poor quality of card sliver and drawing, as far as evenness and nep count is concerned, is presented. For parts I and II see TTD: *7*, 697.

Soft-water system saves $1,040 a year. E. Dalton White. *Textile World 100*, 120-21 (Aug. 1950).

Savings in boiler fuel and chemicals has resulted from the installation of 3 softener tanks of 80,000 gallons per 24 hours capacity each. Daily tests are made of boiler feed water for control within prescribed limits. Water is maintained at a degree of softness to insure a permanent lather when 3 drops of soap solution are put in 40-ml. of water. pH is held to 7.7 and M-alkalinity is 101. Heat exchangers have also reduced fuel costs. Less dye and detergents are used as a result of the water softening. Illustrated with a sample daily feed water and boiler treatment log.

SPONTANEOUS HEATING OF WOOLEN BLENDS. (Pamphlet issued by Benjn. R. Vickers and Sons Ltd., Leeds). *Textile Mercury 123*, 113 (July 21, 1950).

Deals with the causes and prevention of the fire hazard represented by spontaneous combustion of oily wool sheeted up after blending. Two main causes are suggested: (1) The presence of excessive water together with unscoured wool, or scoured wool which has been over-dried; and (2) The use of an unsuitable wool oil. It is with the second of these causes that the pamphlet is largely concerned, for this is a thing that is more capable of scientific treatment and is therefore controllable. In fact the writer sets out to demonstrate that knowledge of the technology of wool oiling is now sufficiently advanced that the heating or firing of wool blends, fettlings and so on should be a thing of the past. Suggestions are made for avoiding heating and a technical discussion is given on the selection of oils suitable for the main purpose while steering clear of such processing faults as staining and dyeing troubles.

Textron's tricot beam conveyor. Anon. *Textile Industries 114*, 121-22 (Sept. 1950).

A system of beam support, used to load and unload beam from racks or tricot frames and to convey these beams through alleys between warpers and frames, is described. The heart of the operation is a portable hoist resembling a lifeboat davit, built from surplus WAA bomb hoists.

Weaveroom swaying stopped by cadence control. Geo. A. Winterburn. *Textile World 100*, 118-19, 202, 204 (Aug. 1950).

The Putnam Mills weave room would sway as much as 12 in. out of plumb due to the looms occasionally getting into lock step. This problem was solved by pairing the looms and so connecting them that each loom of a pair opposed the other. Several methods of doing this were attempted before the problem was solved. The method, employing a high-speed 2 circuit timer, a manual time delay switch, transformer, control circuit switch, and other items is described in detail. Pictures and a wiring diagram are included.

Yarn mill has machinery of novel design. Anon. *Textile World 100*, 108-09 (Aug. 1950).

This 17,000 spindle cotton mill founded in 1945 is one of Italy's most modern. The machinery used in yarn manufacture is illustrated by pictures. A brief description of the machines is also included.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Detection of alkali damage to wool. Rene Genet. *Textile-Rundschau 4*, 351-64 (Oct. 1949); *in German.*

Discusses chemical properties of wool and methods for detecting alkali damage. Washed and degreased wool was exposed to 80°C to the action of 3% soda solution, and individual fibers tested for tensile strength and extension, and for sulfur content. Damage was found to be greatest at the beginning of the reaction: strength, extension and sulfur content decreased with the logarithm of time. It is recommended that the greatest possible stretched length of fiber be tested. The test shows differences between tips and shorn ends of fibers, and provides a good criterion of their wearing properties. Results obtained with the Pauly test could not be evaluated quantitatively.

Relation between damage and the structure of the wool fiber. E. H. Mercer & Lorna Roadknight.

Textile J. Australia 25, 440-42 (July 1950).

Optical and electron microscope studies of the various parts of the wool fiber permit determination of the effect of chlorine enzymes and alkalies on damage to the fiber. This type of damage does not necessarily destroy the fiber, but may impart such desirable characteristics as shrink-resistance.

Study of the effect of lubrication on the dynamics of spinning spindles. J. L. Taylor. (Thesis submitted in partial fulfillment of the degree of Master of science in Mechanical Engineering, Ga. Inst. of Technology, 1948-49).

Successful and economical spining operations depend to a great extent on the satisfactory performance of spindles. The modern trend toward high spindle speeds and large packages has aggravated the interrelated problems of power consumption, vibration, and lubrication. The purpose of the investigation presented in this thesis was to combine a theoretical study of dynamics as involved in fundamental spindle design with the evaluation of experimental results of factors such as speeds, vibration, lubrication, power consumption, and oil throwing. From the work reported here, it was concluded that there is a narrow optimum speed range of minimum mechanical vibration for each design of spindle. Linear vibration of a spindle is affected by the lubricating oil used, and greater damping effect can be expected by employing heavier oil when operating at near-critical speeds. Power consumption for driving a spindle is much greater when heavier oil is used and is also greater when operating near the critical speed. Oil throwing was found to be mainly the result of using more oil than necessary. Abstract from: *Research Engr.*, (May 1950).

Washing process for rewetting. W. Kling. *Kolloid Zeitschrift 115*, 37-44 (Oct.-Dec. 1949); *in German.*

It can be truly said of the wash process in the case of oily soiling media that rewetting is a definite part of the discharge. The qualitative agreement between the theoretical derivation and the experimental results is completely satisfactory. Th quantitative treatment of the process is not as yet entirely feasible. This is based on the fact that no practical method exists for the measurement of the wetting out tension of completely wetting out fluids. It is hoped that in the near future, intensive studies will bring about a clear understanding of the problems of washing.
WJH

Wool damage. N. Van Kuyeren. *De Tex 8*, 626-29 (Oct. 1949); *in Dutch.*

Investigating of the damaging of wool by scorching.
HA

TEXTILE EDUCATION AND RESEARCH J

Cotton waste. Geo. H. Dockray, Barkley Meadows & Leonard Smith. *Textile Industries 114*, 128-31 (Sept. 1950).

A discussion of the research problems relating to cotton wastes whose solutions would benefit the whole textile industry is given. The problems include 1) improvement in control of waste removal at the mill, 2) more efficient cleaning of waste, and 3) improvement in properties desired for certain specific end uses. This discussion is only one section of a broad report on cotton waste.

Expansion of fiber research vital. Jas. A. Stevenson. *Am. Wool Cotton Reptr. 64*, 27-8 (Aug. 24, 1950).

Developments, such as continuous peroxide bleaching, vat acid process, heat setting nylon, etc., are reviewed; and problems which require research for both natural and synthetic fibers are discussed.

Introduction to Textile Chemistry. Bruce E. Hartsuch. New York, John Wiley & Sons, Inc., 1950. 413 p. Price: $4.75.

Introduction to Textile Chemistry is written for those who are interested in textiles, but whose knowledge of chemistry is limited. The generally simple approach, the chapter on organic chemistry, and the glossary combine to give the reader the background needed to understand and profit from the book. The fibers dealt with include cotton, rayon, wool, silk, nylon, Vinyon, Saran, Orlon, and Vicara. In examining each of these, Professor Hartsuch presents industrial practice on felting, shrinkage, creep, cross-linking, resin finishes, etc. The first 2 chapters give basic information on mathematical and chemical calculations, and on organic chemistry. These are followed by a discussion of soap and water and their relation to textile fibers. Chapter 5 covers the classification and physical properties of textile fibers, and Chapter 6, the chemistry of cellulose. The rest of the book is devoted to the detailed study of the textile fibers mentiond above.

Mechanics of elastic performance of textile materials. Part IV: Some aspects of stress analy-

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PROVIDENCE, R. I.

sis of textile structures—staple-fiber yarns. Milton M. Platt. *Textile Research J. 20*, 519-38 (Aug. 1950).

The study of the influence of textile geometry upon textile structure performance is extended to staple-fiber yarns. Some of the results upon elastic properties are: 1) Independent of the staple length, including continuous filament, increases in yarn twist produce similar trends (parabolic) in elastic properties—viz, decrease in elastic performance coefficient and increase in secondary creep; 2) independent of twist, the longer the staple length the better the elastic characteristics —i.e., the higher the elastic performance coefficient and the less the secondary creep; and 3) increases in twist beyond the optimum do not add further cohesion to a staple yarn, and hence all changes in strength and elastic performance with twist beyond the optimum twist arises from changes in fiber inclination as it affects stress distribution.

Mechanics of elastic performance of textile materials. Part V: A study of the factors affecting the drape of fabrics—the development of a

drape meter. Chauncey C. Chu, Clinton L. Cummings & Newton A. Teixeira. *Textile Research J. 20*, 539-48 (Aug. 1950).

Topics discussed are: the improved F.R.L. drapemeter; analysis of the instrument; operating instructions; test procedures, advantages and limitations; experimental procedure for strip-bending and flexibility test.

Need research on detergents. Foster Dee Snell. *Am. Wool Cotton Reptr. 64*, 35, 61 (Aug. 24, 1950).

Both laboratory and practical results show that knowledge of the basic factors is necessary in solving any detergent problem, to be followed up by laboratory research designed to fit the problem. A thorough, systematic and unbiased application research is needed to bridge the gap between science and the art.

1950 textile bibliography. Richard C. Scott. *Textile World 100*, 87-98 (Aug. 1950).

A fairly comprehensive bibliography of books in and out of print, covering nearly all phases of textiles. The listing is alphabetical by subject and

includes a directory of publishers.

Studies on the microbiological degradation of wool; Digestion of normal and modified fibrillar proteins. Wm. H. Stahl, Bernard McQue, Gabriel R. Mandels & R. G. H. Siu. *Textile Research J. 20*, 570-79 (Aug. 1950).

A study of the suceptibility of various keratins and fibrillar proteins to digestion by a keratinolytic fungus. Digestion by *Microsporum gypseum* of the following proteins over a 21-day period was, from the highest percentage digestion to the lowest: collagen, feather, hoof, wool, horn, horsehair, Mohair and silk.

Tendering of nylon by exposure to light. A comparison of dyes of various types which are used for the production of blacks on nylon in relation to their effects on tendering which occurs on exposure to light. O. Newsome. *Can. Textile J. 62*, 46-8 (Sept. 1, 1950).

Loss in mechanical breaking is considered a satisfactory measure of the degree of degradation. Topics discussed include: a comparison of various black dyes; action of heat on nylon; effects of chromium compounds on nylon; variation in concentration of dichromate; and impurities in Hematime Crystals.

Ultrasonic disintegration of cellulose fibers before and after acid hydrolysis. Frederick F. Morehead. *Textile Research J. 20*, 549-53 (Aug. 1950).

A contribution to the knowledge of the inner structure of viscose rayon fibers. The method suggested by Elöd for the layerwise peeling-off of cellulose fibers by acid-catalyzed topo-chemical acetylation in an indifferent solvent and subsequent removal of the acetylated shell by dissolution was critically re-examined and found to be applicable to viscose rayon.

THE WHITIN MACHINE WORKS SINCE 1831: A Textile Machinery Company in an Industrial Village. Thos. R. Navin (Harvard Studies in Business History XB). Cambridge, Mass., Harvard University Press, 1950. 654 p. Price: $6.50.

This is a comprehensive history of the Whitin Machine Works. The men who directed the activities of the company and the policies they pursued are treated in detail. Relations with labor, the firm's participation in the nation's war efforts and its work in developing improved textile machinery and processes are also covered.

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